THE VETERINARY JOURNAL

AND

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DISEASES OF THE EAR IN CATS.

BY HENRY GRAY, M.R.C.V.S., LONDON.

THE external ear in the cat is short, upright, triangular, pointed, and opens in front. Its apex in some cats, especially Persians, has a tuft of hair growing from the inside. In the outer margin the ear doubles upon itself, forming a pouch. The situation of this latter structure is important, as lumps of dirt, insects, etc., frequently become located there.

Serous cyst (*Hæmotoma Auris*) or abscess of the ear, is a swelling on the inside only, or sometimes both on the inside and outside of the flap. It more frequently attacks one, but sometimes both ears are affected at the same time. The ear is swollen, it feels tense, and has a bluish or reddish tint on its surface; but there does not appear to be much pain present. It contains a thin, reddish fluid (*serum*) and a blood clot which separates the skin from the perichondrium and cartilage.

It is always, in my experience, associated with the ear mite (*Symbiotes auricularum*), which seems to cause some disturbance or injury. I have never seen a case without the presence of this mite. The ear after a time, if not treated, or when treated, if not properly attended to afterwards, is liable to be drawn down by the shrinking of the skin covering the tumour. When both ears are affected in this manner, they give the animal a peculiar appearance, resembling that of some savage feline which normally carries these organs in a semi-pendulous position.

Treatment.—It consists, first of all, of washing out the cavity of the ear, and killing the insects. (For this performance see Ear Canker so-called.) If any objection be made to the operation of opening the cyst being performed without the use of an anæsthetic, a few drops of a 4 per cent. solution

of cocaine hydrochlorate can be injected by means of a hypodermic syringe under the skin, or, what is better, the part may be incised after freezing with anestile played on the seat of operation. When the ear is insensible, an incision is made in a vertical position, or in a straight line through the whole length of the tumour, when the serum will gush out. Care must be taken that the clot is removed, after which the internal lining of the abscess cavity should be washed out with a 2½ per cent. solution of carbolic acid, and the loose skin then stitched to the whole thickness of the ear by passing the needle and silk suture through the cartilage, skin, and back again, and tying on the outside. Two or three stitches on either side of the wound may be necessary. After this the wound should again be carefully washed, and a little iodoform collodion should be painted on the raw surface. Another method of operation is to cut out a triangular piece of skin at the lower part of the tumour, and remove the clot with a probe or small bladed pair of forceps, and then wash out the cavity every other day or two with a solution containing 10 grains of sulpho-carbolic of zinc to the ounce of *boiled* water. Instructions should be given that after the wound has healed, the ear must be gently pulled every day to prevent shrinkage, and consequently deformity.

True canker (*Otorrhœa*), or inflammation of the lining of the ear cavity, accompanied with a chronic discharge, is somewhat rare in the cat. It seems strange that every ear complaint of animals should be persistently, but erroneously, termed "canker."

This symptom is seen during distemper, diphtheria, and sometimes, but rarely, follows the effect of the ear parasites.

In *Otorrhœa* there is a profuse peculiar smelling, whitish or brownish discharge, the skin lining the cavity of the ear may not be reddened, but sometimes it is, and then ulceration may follow if treatment be not quickly resorted to. These ulcers—small, and having ragged edges—are scattered here and there on the ridges, and exude a brownish sticky substance, which may give off a fœtid odour. If due to constitutional causes, a recurrence may occur.

Treatment consists in removing all the discharge and dirt by means of a warm solution of superfatted soap applied with a camel's hair iodine brush. After this the ear must be rinsed out with warm water, and again with equal parts of spirits of wine and warm water, and then dried with cotton-wool. When this is finished, very *finely* sifted boracic acid, specially sifted for this purpose, should be blown or gently

pushed down to the bottom of the ear. This may have to be repeated every second or third day, but when the discharge is profuse, it may be deemed advisable to dress the ear daily, taking care that it is previously washed out with the spirituous lotion, and then well dried. In obstinate cases it may be necessary to use something stronger, such as iodoform one part and tannic acid four parts; or calomel, iodoform, and boracic acid equal parts; or creasote 1 drachm, rectified spirits 2½ ounces; or a 1 per cent. solution of chromic acid. Great care and skill are required in the application of these agents, but, fortunately for the cat, *otorrhœa*, especially the chronic form, is rarely seen.

Parasites in the cavity of the ear determine the erroneously called "canker" and properly termed *auricular scabies*, or *acariasis*. or *otacariasis*. It is the commonest affection that the cat suffers from. Of the long-coated cats quite ninety-five per cent. are sufferers? sixty out of every hundred of the cross-bred, and forty per cent. of the common cats, are subject to the affection. It may be seen in cats of all ages, from kittens a month old to those of twenty years or more. It is contagious from cat to cat, from cat to dog and *vice versâ*. I have time after time seen it affect both the dogs and cats at the same time in the same house.

The parasite, or insect, is a mite resembling the cheese-mite, and is named the *Symbiotes auricularum*. It is similar, if not identical, to that of the dog first found by Hering, of Stuttgart, in 1834. But the credit of first detecting the parasite in the ear of the cat is due to Huber, of Memmingen, in 1860; then it was observed by Broquet in 1876, yet it was left to the learned ex-military surgeon, Mégnid, laureate to the French Institute and able editor of *l'Éleveur*, who also encountered it in 1876, to give a description of its true character. He first named it the *Chorioptes ecaudatus*, and then changed it to that of *Symbiotes ecaudatus*.

This mite differs from the mange insect in being oval in shape and by its legs standing well out from under its body and by the head being elongated and well placed forward when viewed under the microscope. The mange insect, on the other hand, is very small, circular in form, the legs scarcely to be seen, and its head short.

When viewed in strong sunlight by the naked eye it appears as a small whitish or cinnamon-coloured and woolly speck, resembling a grain of meal or flour. It is very active in the sun, and may be seen crawling about in the ears, where it is found scattered here and there, or grouped together in

colonies, living in a quantity of brownish or blackish dirt, which is the fæces of the insects. This dirt is spread about either as a powdery material on the lining surface, or it may be found in masses, which in some cases form quite hard concretions, which fill up the cavity of the ear, causing a rattling sound when the cat shakes her head. It is not wax, as thought by some, but the fæces of the parasite, and it resembles that of the cheese-mite found in cheese. The parasite does not bite the skin, and the small abrasions sometimes, but rarely, found on the ridges of the folds of the internal lining membrane are due to the scratching of the cat, or to mechanical irritation, or to inflammation caused by the chemical decomposition of the mite's fæces and not to the biting of the parasite. When the dirt is removed by washing, the membrane will be found, in the majority of cases, to be intact, and in a normal state, even where the ears are filled with dirt and parasites. Its active crawling motion, which is greatest during hot weather, causes a feeling of irritation or a tickling sensation. When the insect wanders over the drum of the ear, its irritative effects are so great that it causes convulsions in some cats, and delirium or temporary partial paralysis in others. Finally, vomiting may be observed. Some cats when touched seem irritable, morose, and excitable, as if the meninges of the brain were disturbed. The pupils are dilated; they make sudden rushes to the window or run into the passage, falling on the side or reeling like a drunken man. In others, the limbs twitch all together, foam issues from the mouth, the pupils are dilated, and the fæces and urine may be involuntarily passed. After an attack like this the animal appears sullen, drowsy, or comatose. I have seen in some cats when made to stand upright, with the fore-limbs resting on a chair, a tendency to fall or reel backwards, and if made to turn suddenly round, they fall on their side or roll over, and in such cases, the head having a lateral shaking motion, resembling the appearance of a man suffering from shaking palsy.

The *symptoms*, which are always present, indicating the presence of this parasite are a frequent scratching of the ear with the hind leg. The cat suddenly stops, sits down and inclines her head to one side, and scratches away as if it gave her great pleasure to do so. In some cases this is so great that she becomes quite frantic and "swears." If she is examined on the outside of the back of the ears or head, abrasions caused by scratching will be found, and it is

generally for this sore that advice is sought. If the ear is touched, or an attempt is made to wash out or remove the dirt by any other means, such rapid and furious scratching movements are made by the hind limb that one, unless he is an expert with cats, might receive injury. This action is characteristic of the affection. It does not seem to be due to pain, but to an irresistible desire to gratify the pleasurable sensation. Sometimes advice is sought for the swelling of the flap of the ear. (Serous abscess, which see.) This is caused by injury due in the first place to the parasites, which will be found on inspection.

Treatment.—It consists in removing the parasites and dirt by washing out the ears by means of superfatted soap and warm water applied with a camel's hair iodine brush, afterwards rinsing out and drying with cotton-wool. Sometimes it is necessary to use the ear-scoop to remove the hard concretions, but this operation must be left to the expert. Particular attention should be paid to the pouch formed by the duplicature of the internal lining of the outer wall of the ear, as it frequently contains parasites and concretions, which, if overlooked, will prevent a cure. The ear syringe should be discarded, and only those of limited experience, or none at all, would advise its use.

It will be advisable to apply an ointment or liniment to the inside of the ears to kill any straggling insect or eggs left behind. A diluted ointment of any of the mild mercurial compounds, or Helmerick's pomade, or, in fact, anything that will kill the parasites and not injure the patient will be useful. Sulphur ointment, I have satisfied myself, will not kill this parasite, and carbolic compounds are so dangerous to the cat that they should not be used. Balsam of Peru 2 drachms, glycerine 4 drachms, mixed together make a pleasant application, or the following lotion, which is very safe and not expensive: Liver of sulphur 10 to 20 grains, rose water 2 drachms, glycerine 6 drachms. Care must be taken not to soil the cat's fur with any of the dressings, especially those of a poisonous nature, for the animal having cleanly habits, will clean the soiled pelage, and by doing so, will ingest the drug at the same time.

The ears, from time to time, should be inspected, to discover if any parasites have again taken up their residence there. Again, its contagious nature must be taken into consideration, for, as I have said before, it is catching from cat to cat, cat to dog, and *vice versâ*.

The ears of the cat are sometimes the seat of ringworm,

sarcoptic mange, and follicular scabies. These have, however, been described under skin diseases in the January number of this Journal.

Cases.

CASE OF "IMPACTION."

BY VET.-MAJOR D. C. PALLIN, A.V.D., CHATHAM.

Peculiar Symptoms.

IT was early on a Sunday morning when I was knocked up by an orderly from barracks, who informed me that a mare which a short time ago had suffered from colic, was again bad, but apparently worse than on the last occasion.

In about a quarter of an hour I was with my patient, in the meantime ascertaining that no irregularity was noticeable, except that during the night she had eaten a considerable amount of her bedding.

I found her in one of the infirmary boxes, to which place the animal had been with great difficulty removed from the troop stable.

She stood in its centre, the legs being spraddled, the head pendulous, the lips touching the newly-laid down straw bed. The eyelids were swollen and slightly congested, the tongue protruded from the partially opened mouth, and a copious discharge of frothy saliva gave the organ the appearance of that of a dog suffering from "Dumb Rabies." The body was covered with sweat, while the extremities were icy cold. Temperature 104; respiration 36, laboured and performed with a jerk; pulse 58, and full, with the exception of each sixth, and sometimes seventh beat, being entirely absent. There was extreme stiffness and inability to move, particularly the hind quarters. The rectum was full and distended with healthy fæces, which was removed without delay, and an enema immediately given. An attempt to raise the head seemed to cause intense pain, and the animal to fall suddenly on her knees. Great difficulty was experienced in opening the mouth for examination, and on the muzzle being placed in half a bucket of tepid water, the power of prehension and deglutition appeared completely lost; thus the administration of a drench without casting seemed an impossibility. The animal presented a drunken appearance, but stood perfectly quiet.

What had I to deal with? A case of stomach staggers, impaction, serious injury through struggling during the night, internal rupture, a clot causing pressure on some nervous centre, kidney trouble, effects of poisoning, aye, even quinsey or dumb rabies, rare equine maladies. The symptoms exhibited pointed to each and all of these diseases, but, alas! my patient could not speak or enlighten me, and I was for a time at a loss to form a true and correct diagnosis of the case.

I am by no means a young or inexperienced practitioner, still I must confess feeling on this occasion, uncommonly like the "great Ranji" "Stumped." Something, however, had to be done, and what treatment was I to adopt? Backraking and enemata came first, which had already been carried out. I then thought of bleeding, but on re-examination of the pulse I decided not to do so.

Concluding to give an aloetic purgative, I had a fresh soft ball made up, and wrapped in very thin tissue paper. While this was being done the body was well wisped, a rug put on, and woollen bandages applied to legs. I then placed two men each side of the neck with a view of preventing the animal falling on me during my attempt to administer the aperient. Going down on my knees in the straw, I, with some difficulty, sufficiently opened the mouth, so as to allow me with a quick effort to lodge the ball in the pharynx. My escape from being crushed in doing so was most miraculous, as the slight elevation of the head cause the animal to suddenly pitch forward and fall. Being hastily released, she was quickly on her legs gaining the original position. I quickly had a strap placed round the muzzle, and watched for close on ten minutes, when to my delight I saw the ball travelling down the trachea. During the next four hours no noticeable change took place and the treatment pursued consisted merely of repeated enemas.

Two hours subsequently, however, a marked improvement was apparent. Respirations became easier; sweating almost ceased; head being less pendulous; extremities warmed up; and both fæces and urine had been voided.

Later in the evening, entertaining a hope of hastening the action of the physic, I decided to give a good stimulant, but its attempt at administration gave rise to frantic paroxysms, consequently I left patient alone.

The following morning she was found in the exact position she had been left the previous night, and on visiting I was agreeably surprised to find the great improvement which had

taken place. Respirations had become almost natural. Temperature 101°, pulse 48 and regular, with the exception of each sixth, and sometimes seventh beat already referred to, not being quite so full in volume as the other pulsations. Stiffness and inability to move still existed, but not to such an extent as on the previous day. A little chilled water was slowly swallowed and some warm bran mash taken out of the hand.

About noon I ordered a little exercise, which seemed to cause further improvement, and I was then able to administer a stimulant. Between 3 and 4 p.m. physic commenced to act, a liquid motion taking place, and from that moment gradual recovery was made.

Five days subsequent to admission the mare was discharged "cured" for duty, and has since remained well, doing her regular work. The case, no doubt, was one of "Impaction," giving rise to stomach staggers, peculiar and aggravated symptoms being presented, which happily yielded to simple treatment.

RUPTURE OF THE ŒSOPHAGUS IN A HORSE.

BY MR. T. CHARLES HOWATSON, NEW VETERINARY COLLEGE.

THE following case came before my notice last summer whilst seeing practice with Messrs. J. S. Carter and Son, F.R.C.V.S., Bradford.

On August 7th, about noon, a man came to the surgery in a very excited state of mind, and informed us he had a "glandered" horse, and wanted us to go and see it without delay. On arrival at the place we found the subject to be an aged, bay cob, standing with depressed head, and a copious green discharge issued from both nostrils. We were told that the animal had been to work in the morning, drawing a lawn mower on a cricket field, and that the man had allowed him to eat some of the cut grass. Nothing was noticed wrong till the animal arrived at the stable.

On further examination we found a soft swelling, about the size of a cricket ball, on the near side over the œsophagus, just at its entrance into the thorax, and an emphysematous swelling extended up the jugular furrow to the head. Pulse, 75 per minute; temperature, 103° F. We suspected we had a case of choking to deal with, and taking the emphysema into consideration, we thought it possible that a rupture of the œsophagus also existed.

We proceeded to hand rub the swelling, and administered a draught of water, which caused uneasiness and champing of the jaws, followed by a return of the fluid, mixed with small portions of grass through the nostrils. We then ordered warm fomentations and a mild, stimulating liniment to be applied to the neck.

August 8th (morning).—Patient much the same. Discharge not quite so profuse. Emphysematous swelling increased. Other symptoms as before. (Night.)—Patient much the same.

August 9th.—Emphysema again increased, involving the head, neck, under the thorax, and fore limbs. Pulse, 60 per minute; temperature, 103F.

The horse was visited twice a day, and exhibited the same symptoms, except that the emphysema increased, and the fomentations were continued till August 11th, when we noticed that a small quantity of water was swallowed. The man afterwards offered him a bran mash, some of which was swallowed with difficulty. We, of course, repeatedly recommended slaughter, but the owner would not consent to this. On August 12th the horse was lying down, but immediately got up when approached. The emphysema had now extended over the whole of the body, the animal appearing a very peculiar object. Pulse 80 per minute, and very weak; temperature had risen to 106°F.; breath very fœtid. We concluded that the end was not far off. He died the same night.

A *post-mortem* examination was made on August 13th. On opening the abdomen a large quantity of fœtid gas escaped. Stomach contained a quantity of fluid tinged with blood; Intestines presented no great abnormal appearance; lungs were somewhat congested; œsophagus was highly inflamed and ruptured longitudinally on each side (each rupture measured 1½ inches) at the seat of the swelling. Extending upwards along each side of the trachea we found a quantity of decomposed grass.

Traumatic causes of the rupture were looked for but not found.

The peculiar features presented, the unknown cause, and the length of time the animal lived after manifesting the first symptoms, compel us to consider this case of rather peculiar interest, and trust that if any readers have met with similar cases they will record them.

DERMOID CYST OF THE TESTICLE.

BY WM. LOTHIAN, ESQ., DUNS, N.B.

BAY Clydesdale yearling, subject for castration. The owner has noticed since the animal was little more than a month foaled that on the left side a very large testicle is present, and, suspecting that a rupture had taken place, I was asked to examine the parts.

I was soon able to satisfy myself that at least there was no hernia. I examined the foal again in September, after weaning, and found that the testicle only was there, but that it was a very large one. On castrating the colt on April the sixth, the cut through the scrotum allowed to escape a large quantity of hydrocele fluid.

After the operation was completed I found, on examining the testicle, that it was made up of congeries of cysts.

Below the gland substance was a cavity large enough to hold a small hen's egg. It was lined by a clear, shining membrane, and was crossed here and there by bands, and contained semi-fluid material. On trying to lay it open, the wall at one part was made of bone and had to be sawn through in order to separate it.

On the membranous expansion connected with the testicle were numerous secondary cysts. Several had much the appearance of mesenteric glands. On opening into a rather large one, I was astonished to find that it contained a quantity of coiled hair, mixed with which was a mass of sebaceous matter.

The theory used to explain these tumours is that an abortive embryo is fused to a normally developing one, and certainly in this case a sufficient percentage of representatives of the normal tissues was present to give some credence to the explanation.

A CASE OF FRACTURED PASTERN.

BY A. CUSTANCE.

THE following case occurred whilst I was seeing practice with Mr. Spreull, F.R.C.V.S., of Dundee, and as it is one of not quite every-day occurrence, it struck me that it might be worth recording. On November, 6th an urgent message came in to the effect that a horse had broken its leg and help was required at once, as it could not move. It appeared that the animal, a grey gelding, 9 years old, owned by a cab

proprietor in the town, had been conveying a party to a foot-ball match in the suburbs, and had been frightened by a brass band which caused him to shy (but not fall) into a heap of broken stones such as are used for repairing the roads. On arriving at the scene of the accident the horse was found standing by the roadside trembling and sweating, with the off-hind foot held up about 18 inches from the ground. The pastern proved to be the seat of injury, and on careful manipulation it was found that the os suffraginis was badly fractured (in fact literally smashed) the broken pieces of bone rolling and grinding on each other like matchwood between the fingers. The owner was recommended to destroy the animal it being pointed out to him that at the best many months must ensue before the horse could be worked, and that indeed it might be found necessary to kill him after several weeks of time, trouble, and expense had been wasted on him. The owner explained, however, that as the horse was a favourite and also the best worker he had, he was anxious to give him a chance; so of course everything was done to increase the possibility of recovery. A float was fetched, and with considerable difficulty the horse was put in to it and conveyed to Mr. Spreull's establishment, where yet greater difficulty was experienced in getting him safely out of it, through the forge, and into a loose box strewn with peat-moss litter. The slings being adjusted satisfactorily, the bone was placed as nearly as possible in the natural position, a cotton bandage being then wound round the pastern from above the hoof to the fetlock-joint in order to decrease any chafing which might ensue, and the whole was enclosed in a gypsum case from hoof to fetlock. A hot bran mash being given, he was left as comfortable as was possible under the circumstances. After some slight annoyance displayed at first at the slings, the horse became reconciled, and, in fact, regularly lay in the support thus provided for him, spending most of his time sleeping comfortably with the injured limb drawn forward under the belly, and his head resting on the manger, only waking up when spoken to or fed. The rope near the block having in time become chafed and weakened without being noticed, the result was that one morning a few weeks later it broke and let him down with a run. Luckily we were with him when this occurred, so we were able firstly to prevent him from damaging himself in his fright, and secondly, to extricate him from the slings which were, of course, in a confused heap amongst his feet. New tackle being procured he was once

more slung, it being found that the bandage had in no wise suffered from this accident, the gypsum remaining intact. Four weeks after the date of admission the bandage was removed to see what progress had been made. It was found that the bone was uniting, the hollow of the pastern being filled with a large callus, the whole being much swollen and hard, but no signs of chafing anywhere.

A fresh bandage of the same description was again put on. In thirteen weeks time from the date of the accident he was taken out of the slings and assisted to walk, or rather to hobble, round the forge. Every night he was taken out of the slings and walked in this way, the distance being gradually increased in proportion to the improvement shown. At the end of a week of this exercise the shoe was taken off (a proceeding it would have been obviously unwise to have attempted at an earlier date) and the horse was restored to his owner on February 13th, walking home, a distance of a mile and a half, without much difficulty. Here he was again slung, and every day taken out and walked up and down. In a fortnight after his discharge, that is in four calendar months from the occurrence of the accident, the bandage was entirely removed and he was put into harness, being shod a week later. The exercise was gradually increased, and the improvement in gait being at this time very rapid, though he still went on the heel a good deal and pushed the injured foot very far forward, picking up the limb rather suddenly and jerkily at each stride. On the 20th of this month (April) he was seen pulling a ton of coals up a hill and working well, with scarcely any stiffness left in the injured limb. So the case may be, I think, considered a satisfactory one from beginning to end.

VOMITION IN THE HORSE DUE TO A MESENTERIC EMBOLISM.

BY J. CONNOCHIE, M.R.C.V.S., AYTON.

Subject.—A valuable hackney filly, rising three years old.

History.—A moderate feeder, with occasional periods of loss of appetite for a day or two together throughout the winter, nevertheless always plump and fat.

Clinical History.—She was observed to be feeding sparingly for two days, but, as this was not unusual, little attention was paid to it. On the morning of the third day, however, she was noticed to lie almost constantly and show general uneasiness, occasionally rolling over and lying on her back. A

dose of colic mixture was given, and then, as she did not improve, I was sent for. When I entered the box she was lying in the normal position, but by no means at ease. Her breathing was slow and heavy, and she often emitted a sort of suppressed groan, as if suffering great agony internally. Her countenance, too, was anxious and depressed. While watching her I both saw and heard a commotion in the œsophagus. This I soon found to be due to fluid ingesta passing up and down between the stomach and the pharynx. Shortly afterwards she commenced to attempt to vomit. She first gave the characteristic squeal (I cannot think of a more expressive or better word), and then by a spasmodic contraction of the muscles, the neck was abruptly shortened, the upper border made concave and the lower convex, the head was lowered, and the chin jerked towards the breast all at once. She continued to do this for three hours before anything passed down the nostrils. When it did come it was a dirty, straw-coloured, ill-smelling fluid, with particles of hay, etc., floating in it. The quantity that escaped was enormous, as she vomited almost incessantly for nine hours. Strange to say, the vomition almost entirely ceased an hour or two before she died.

Treatment.—This was palliative as much as possible, but no more medicine was given by the mouth.

Post-mortem.—This was conducted by Mr. Lothian, V.S., Duns, and myself. Naturally, we went straight to the stomach, expecting to find the chief lesions there, and I must confess we were a little amazed to find next to nothing wrong. It was, of course, very much distended and full of fluid, but, with the exception of the epithelium covering the mucous membrane being very much macerated and peeling off, there was nothing else to be seen to account for the stomach symptoms. This being so negative, we decided to look elsewhere for the principal cause of death, and we were rewarded by finding the pancreas, intestines and mesenterics presenting an appearance unlike to anything either of us had ever seen before. The former was quite green in colour, and just looked like becoming gangrenous, while the intestines were very red and congested-looking. The most noticeable feature was the beautifully mapped-out condition of the whole mesenteric venous system. Every vein, large or small, and every capillary was distended to its utmost with blood, showing up a bluish green or black colour. The mesentery had quite lost its transparent, delicate appearance and had become very thick and heavy, due, doubtless, to an exudation

of serum from the distended veins and also from the lymphatics, for they, too, seemed to be in a similar congested condition. The contrast between the veins full of blood and the lymphatics full of chyle was really very pretty. After a long and careful search we found an *ante-mortem* clot in the anterior mesenteric vein. That part of the vein occluded by the clot had a constricted appearance, and its walls were considerably thickened, while the part beyond was greatly dilated. All the veins which unite to form the anterior mesenteric were enormously distended, and could be easily traced to their source in the large and small intestines. There could be no doubt about the clot being *ante-mortem*, as it was pale in colour and, although friable, was still very adherent to the tunica intima. It seemed to cause complete stasis of the venous circulation. The stomach symptoms must have been purely reflex, possibly from pressure of the distended veins on the nerve filaments which go to form the solar plexus and the free anastomoses which occur between it and the pneumogastric nerve.

TO THE MEMBERS OF THE PROFESSION.

GENTLEMEN,—I beg to offer myself as a candidate for election in the Council of the Royal College of Veterinary Surgeons.

I am in favour of progress, and consider that the more we advance, the higher public opinion will be of us, but this advance must be both practical as well as theoretical.

I am of opinion that the profession will not receive the official recognition it is entitled to until a member of it is in the House of Commons.

If I have the honour to be elected, I hope to be a working member of the Council, and to devote my endeavours to the general welfare of the profession.

JOSHUA A. NUNN, F.R.C.V.S., C.I.E., D.S.O.
Veterinary-Major, A.V.D.

Junior United Service Club,
Craven Street, S.W.

Proceedings of the Royal College of Veterinary Surgeons and Veterinary Medical Societies, etc.

ROYAL COLLEGE OF VETERINARY SURGEONS.

A QUARTERLY meeting of the Council was held at 10, Red Lion Square, on Tuesday, April 5th, under the presidency of Professor Penberthy. Present: Professors Dewar, Edgar, J. McI. McCall, McFadyean, Pritchard, Shave, and Williams; Veterinary-Colonel Lambert, Messrs. Abson, Barrett, Beddard, Carter, Cope, Dollar, Elphick, Fraser, Hartley, Lawson, Mason, Mulvey, Simpson, Trigger, Villar, Wartnaby, and A. W. Hill (secretary).

The SECRETARY read the notice convening the meeting.

Absentees.

The SECRETARY stated that he had received letters of apology from Professor W. O. Williams and Mr. Bower regretting their inability to attend the meeting.

Minutes.

On the motion of Mr. FRASER, seconded by Mr. LAWSON, the minutes of the last quarterly meeting (which had been printed and circulated) were signed as correct.

Correspondence.

The SECRETARY read a letter from Mr. Trigger, enclosing the following communication:—

Buckingham Palace,
March 4th, 1898.

Lieutenant-Colonel Sir Fleetwood Edmunds presents his compliments to Mr. Trigger, and is commanded by the Queen to forward him the accompanying medal to be worn in commemoration of the 60th anniversary of Her Majesty's reign.

The SECRETARY read from the Privy Council office, enclosing copy of a letter from the German Embassy (received through the Foreign Office), applying for information with regard to certain points in connection with the admission of foreigners to medical examinations in the United Kingdom. The Council of the Royal College was requested to furnish the Lord President with the required information and documents in so far as it related to the practice of veterinary surgery, for communication to Count Hatzfeldt.

The following is the copy of the letter from the Germany Embassy to the Privy Council:—

German Embassy, London,
January 12th, 1898.

My Lord,—In connection with the work of the revision of medical men, and the establishment of uniform bases for the admission of foreigners to medical examinations in the German Empire, which is now proceeding in Germany, the Imperial Government are anxious to be supplied with the regulations in force in Great Britain and Ireland on these subjects. They especially wish to have information on the following points:

1. Under what conditions is the practice of medicine (including dentistry and the veterinary art, but excluding midwifery) allowed? Is the practice of medicine by foreigners subject to particular conditions? Is so-called quackery forbidden?

2. Is an approval or other declaration of competence necessary in the case of doctors, dentists or veterinary surgeons? What are the rules in regard to the "approval" and examination? What advantages do medical men, etc., approved or otherwise declared competent, enjoy as compared with any other persons who may be permitted to practice medicine?

3. Can foreigners obtain an "approval" or other declaration of competence as medical men? Are there additional conditions in this respect in the case of foreigners over and above the conditions in the case of natives? In what circumstances may they be exempted from some of the conditions on account of having received a scientific and technical education abroad?

In accordance with the wish of the Imperial Government, I have the honour to request your Excellency to be so good as to supply me, so far as may be possible, with the information asked for, and to indicate the laws and regulations which embody the principles prevailing in England in this matter.

(Signed) P. HATZFELDT.

On the motion of Mr. MULVEY, seconded by Mr. BARRETT, it was resolved that a copy of the bye-laws and regulations be sent to the German Embassy.

A letter was read from Mr. S. M. Wilson, M.R.C.V.S., asking a similar question.

Walley Memorial Fund.

The PRESIDENT: On the last occasion a letter was read from Mr. Rutherford with regard to this matter, and our secretary was asked to write to him. Mr. Rutherford's reply will now be read.

The SECRETARY read the letter from Mr. Rutherford, dated January 28th. It stated that a meeting of the committee and subscribers had been held on January the 26th, when it was agreed that the Royal College of Veterinary Surgeons should be approached with the view of ascertaining whether they would be willing to undertake the trusteeship of the fund under the following conditions: (1) That the money be invested forthwith in feu duties or ground annuals in Scotland. (2) That the revenue derived annually from such investment be given as a prize annually to the student who obtains the highest marks at a special examination to be held for that purpose. (3) That the examination be open to the students of any veterinary college in the United Kingdom who shall have, since the previous October, passed the class "C" or third examination under the present four years' course of the Royal College of Veterinary Surgeons. (4) That the subjects of examination be pathology, materia medicæ, and hygiene, and that the examination be wholly a written one, and that the time allowed to each subject be not less than two hours. (5) That the examination be held simultaneously in London and in Edinburgh (and in Dublin in the event of the Irish Veterinary College being established). Mr. Rutherford stated that he was authorised to say that if the College was prepared to accept the trusteeship on those terms the committee were prepared to hand over the money subscribed, amounting to £313 12s.

Mr. SIMPSON: I think this is a compliment on the part of those who have taken part in collecting this money for the Walley Testimonial Fund. It is a compliment to our college that they should approach us and ask us to become trustees, and I propose that the suggestion made by them be accepted by this college.

Mr. LAWSON seconded the motion, which was agreed to.

A letter from Mr. Henry C. Wilkie, F.R.C.V.S., F.Z.S., was read, in which he pointed out that his degree of F.Z.S. was omitted in his nomination to the post of examiner.

Preliminary Examination.

A letter from Professor DEWAR was read, in which he stated that he would call the attention of the Council to the raising of the preliminary medical examination by the General Medical Council.

Professor DEWAR said it was within the knowledge of the Council that the General Medical Council were going to raise the standard of the preliminary examination for medical students and students of medical science on the 1st

January next. Doubts had been expressed as to whether certificates would be received from students in Scotland who had hitherto been examined and passed the examination of the Educational Institute of Scotland. It was for the Council to say whether it would go on following the General Medical Council in raising the preliminary examination or not.

The PRESIDENT: I am afraid this is a very difficult subject to discuss under such conditions without any notice of motion. We have a very specific bye-law, so that we are in no danger at present, but to ask us to prophesy what the Council is going to do in the future is going a little too far.

Professor DEWAR wished to know whether the examination in Scotland would be conducted on the same lines as hitherto, and whether it would qualify their students.

The PRESIDENT: If it agrees with our bye-laws it will.

Professor WILLIAMS: I think the bye-law is clear enough, but there is one difficulty. The students in Scotland are examined with all other students, medicine and art students, and unless we get a separate examination, as you in London, as a matter of necessity our men pass on the same level as the medical students.

Professor MCFADYEAN wished to correct a wrong impression which was sure to arise from what Professor Williams had said. The students of the Royal Veterinary College were never submitted to a separate examination; they were always submitted to an examination where the questions were absolutely the same as the medical students had to answer. He also wished to protest against the informality of the debate.

The PRESIDENT: I had no intention of allowing the debate to go any further, because it was altogether too important to be considered without due notice.

A letter was read from Mrs. Perrins thanking the Council for their letter of sympathy.

A letter from the Clerk to the Worshipful Company of Farriers, dated the 21st February, was read. It stated that a copy of the report of the Registration Committee, for the year ending 31st December, 1897, together with the audited accounts and list of subscriptions had been forwarded.

Notice of Motion by Mr. Wartnaby.

Mr. WARTNABY: I beg to give notice of the following resolution with regard to Class "C" Examination, under the four years' course:—"That the examination of students in *materia medica* be made a practical one."

The notice of motion was suspended in the usual manner.

London University Extension Bill.

The PRESIDENT: I received a letter from the University of London, asking me to attend a deputation to the Lord President of the Council, urging him to support the London University Commission Bill. I attended the deputation, and we were approached by the London University and asked to take part in a deputation to help forward a scheme of their own which would really be an extension of university work in London.

Mr. BARRETT: May I ask if the extension had reference to veterinary matters, or the institution of veterinary degrees, or anything special.

The PRESIDENT: Nothing special.

Dogs' Regulation Bill.

The SECRETARY read a letter from Professor Edgar dated 11th March, which stated that under the new Dogs' Regulation Bill ordinary police constables had the power relegated to them to destroy on their own judgment dogs which they supposed were affected with rabies. Professor Edgar asked if some protest to that very dangerous clause ought not to be made by the Council immediately.

The PRESIDENT: I have watched this matter as carefully as possible in order that I might give the Council an opportunity of expressing their opinion on it, and I have had an assurance that the Bill would not come on until after Easter. It is now for you to consider whether there is any part of the Bill which requires the interference of this Council.

Professor MCFADYEAN: I think this is one of those subjects which would be much better considered by a small committee, and I therefore propose that we appoint a committee to be composed of the President, Professor Edgar, Mr. Simpson, and Mr. Mulvey, and that we empower them to approach the proper authorities to take whatever steps they consider necessary to safeguard the interests of the Royal College of Veterinary Surgeons.

Mr. FRASER seconded the motion, which was agreed to.

Professor EDGAR: Will there be time for this matter to be relegated to a committee, considering all the official red-tapism that has to be gone through?

The PRESIDENT: The committee will have to meet very soon—I should think to-day.

Professor EDGAR: It would be unfortunate if this clause did not receive any criticism from the veterinary profession when it is receiving criticism from the medical profession and from every public body interested in any way in dogs, and by the public also. We should be left entirely out in the cold in raising any protest against this clause.

Mr. SIMPSON: May I suggest that if the Council have sufficient confidence in the committee they give us power to act.

The PRESIDENT: You must act because the Bill will be over next week.

PRESENTATIONS TO THE LIBRARY AND MUSEUM.

The SECRETARY announced that presentation copies of *The Veterinarian*, *The Veterinary Journal*, and *The Veterinary Record* had been received from their respective editors. The College had also received a copy of the calender of the College of Preceptors, 1898, a copy of the calender of the Pharmaceutical Society, 1898; and the Annual Report of the Imperial Bacteriologist for the official year 1896-97 from Professor Lingard, professor of comparative pathology (Simla). Mr. Goodall, of Christ Church, had also presented a numerous collection of horses' heads and teeth.

On the motion of Mr. LAWSON, seconded by Mr. FRASER, a vote of thanks was accorded to the donors.

Finance Committee.

Mr. TRIGGER (as Chairman) read the report of the Finance Committee, which recommended that the amount paid annually to the Bursary account should cease, that the amount of £50 be refunded to the general account of the College, and that the Treasurer be instructed to invest the balance standing to the account. The report further recommended that the present liabilities be discharged. It would be remembered, he said, that for some years past a sum of £50 had been put aside to form the bursary fund. The Council some time ago had passed a resolution adding this fund to the Jubilee Memorial Fund, and the committee had felt that, inasmuch as the fund now

amounted to over £900, the £50 for the bursary should be discontinued; in other words, it was proposed to cease putting aside £50 a year of the funds of the College. He begged to move that the report of the Finance Committee be received and adopted.

Professor PRITCHARD seconded the motion, which was agreed to.

Registration Committee.

Mr. SIMPSON (as Chairman) read the report of the Registration Committee and moved its adoption.

The report stated that a person had been prosecuted for using the word "veterinarian," and had been convicted and fined 40s. and costs. Certain members had appeared in answer to a charge of advertising, and had given an undertaking. Two other members had also appeared before the committee on the charge of advertising, and had given a special undertaking. A special report had been brought before the committee by the solicitor of the college with reference to a firm styling themselves "veterinary chemists," but it was recommended that no action be taken. Certain cases had been referred to the solicitor for investigation, and if necessary to report for prosecution. The committee had investigated several complaints, but did not consider that any case had been made out. In several cases complaints had been made against persons for infringing section 17 of the Act. The offences were discontinued, and in some instances undertakings were given, and the committee recommended that no further steps should be taken. In the case of a person claiming to be a graduate of the Ontario Veterinary College, the committee has referred the matter to a solicitor to investigate, and if necessary to prosecute. The following members had applied for the restoration of their names to the register:—Robert Johnston and G. H. Herron; and also the following registered practitioners:—A. Holmes, F. Maynard, and P. F. Taylor, who had been struck off the register for non-compliance with sub-section 4 of section 5 of the Act. The committee, being satisfied with the evidence furnished, recommended the restoration of the names on the usual terms. In the cases of unqualified persons professing to act as "veterinary chemists," the committee referred the complaints to the Pharmaceutical Society. The committee had considered the report of the sub-committee as to a simpler form of complaint, which was as follows:—"Your sub-committee have to report that the form of complaint was submitted to them for revision as altered by the Council, and recommend that the questions be simplified according to the form agreed to by the sub-committee." The committee had made some alterations in the form, and subject thereto, had endorsed the report of the sub-committee.

Mr. MASON seconded the motion for the adoption of the report, which was agreed to.

Mr. SIMPSON: I think it will be necessary that a special resolution be made with reference to the restoration of names. I therefore propose "That the names of Robert Johnston, G. H. Herron, A. Holmes, F. Maynard, and P. F. Taylor be restored to the Register in accordance with the recommendation of the committee."

Professor PRITCHARD seconded the motion, which was agreed to.

Examination Committee.

Mr. MULVEY (as chairman) read the report of the Examination Committee

The report stated that the Committee had investigated the subject of the alleged misconduct with regard to copying at the written examination. The Committee having very carefully considered the reports of the examiners and

the delegates, had found no cause to make any alteration in the system of examination. The Committee, however, recommended that in future sufficiently large rooms be engaged for the conduct of the written examination, and that rule 89 be strictly observed. The Committee further recommended that funds be provided for the purchase of a carcase for the purposes of examination on meat inspection, and that instructions be given to the examiners to confine their questions strictly to the subject they were appointed to examine upon, and that the questions set be such as could reasonably be answered in the time allowed. Also that the Secretary be instructed to see that the irregularity which occurred in the biology paper in December last, should not occur again. The Committee recommended that Mr. Albert McDowell be informed that it will be necessary for him to pay the same fee as before, and enter his first examination *de novo*.

Mr. LOCKE seconded the motion for the adoption of the report, which was agreed to.

Publication Committee.

Mr. DOLLAR (as chairman) read the report of the Publication Committee, and moved its adoption.

The report recommended that in future a draft copy of the Register be sent to each member of the committee.

Mr. MULVEY seconded the motion, which was agreed to.

Election of Examiners under the Four Years' Course.

On the motion of Mr. SIMPSON, seconded by Mr. BARRETT, it was resolved, "That the recognised method of balloting by the majority of public bodies be adopted."

The balloting was then proceeded with, and the following examiners were elected.

Class "A."

Anatomy.—T. B. Goodall; W. H. Bloye.
Chemistry.—H. Somerville; J. M. Munro.
Biology.—W. B. Walters; J. R. Green.

Class "B."

Anatomy.—Geo. Fleming; W. F. Peacock.
Physiology.—F. Smith; J. B. Haycraft.
Stable Management.—R. Moore; W. Wilson.

Class "C."

Pathology.—G. Sims Woodhead; S. Delépine.
Therapeutics.—Jas. Clark; J. Freeman.
Hygiene.—W. Pallin; W. Woods.

Class "D."

Veterinary Medicine.—W. Duguid; J. Malcolm.
Veterinary Surgery.—W. Hunting; H. Olver.

On the motion of Mr. MULVEY, seconded by Mr. TRIGGER, the following gentlemen were appointed examiners in Class "C" examination:—

Oral—Cattle.—W. Duguid; J. Freeman.
Oral—Horse.—J. Malcolm; G. Fleming.
Practical—Cattle.—J. Clark; H. Olver.
Practical—Horse.—W. Hunting; W. Woods.

Fellowship Examiners.

Medicine and Surgery.—Jas. Macqueen.
Hygiene.—Geo. Fleming.
Pathology.—W. Duguid.

Date of Examinations in Scotland and England.

On the motion of Professor DEWAR, seconded by Professor WILLIAMS, it was resolved that the written examination in Scotland should be held on Friday, May 13th, and the oral on the following Tuesday.

On the motion of Mr. TRIGGER, seconded by Mr. SIMPSON, it was resolved that the written examination in London should be held on Friday, July 8th, and the oral on the following Tuesday.

Date of Fellowship Examination.

On the motion of Mr. TRIGGER, it was resolved that the Fellowship Examination be held in London on Saturday, July 9th.

Appointment of Scrutineers.

The following gentlemen were nominated to act as scrutineers :—Messrs. G. H. Simpson, Mulvey, Hobday, Mahon, Todd, Whitlamsmith, McOnie, Reekie, Rogerson, Welsh, Perryman, and G. Brown.

On the motion of Mr. TRIGGER, it was resolved that the gentlemen nominated be asked to act as scrutineers, and, in the event of a sufficient number not accepting, the President have full powers to supply the deficiency.

Mr. SIMPSON : Before we separate I should like to ask who are the members of the Council who retire in July.

The SECRETARY : The following members retire from the Council then : General Sir Frederick FitzWygram, Professor Penberthy, Messrs. Trigger, Dollar, Mason, T. D. Lambert (Dublin), James Fraser, and Abson.

Mr. ELPHICK : May I make a suggestion, Mr. President. We have a very valuable library here, but I think there might be a very important addition to it. I think this College should keep all reports of Royal Commissions, etc., that are published for reference at any time, such as commissions on tuberculosis, swine fever, pleuro-pneumonia, etc. I think they are very important documents which this College should retain in its possession. I believe that the College does not buy anything ; what they get is given to them, or practically so, and I think it will be a very valuable addition to make to the Library.

Mr. WRAGG : We cannot afford it, sir.

Mr. COPE : I think I always keep the College informed of everything of that kind that goes on. I always make it a rule to send every report that comes into our house to the Secretary of the College. I think you will find he has all our reports of every description from the Royal Tuberculosis Commission. If there are any more which are required I shall be very pleased indeed to forward them.

The PRESIDENT : What is done with reports which we have received ?

Mr. ELPHICK : I never see them acknowledged in any way.

The PRESIDENT : I am very pleased to tell you as the outcome of my enquiry that they are all put into the library, and all duly acknowledged when they are sent with an address.

Mr. MULVEY : I may also state that some few years ago the Council gave a sum of money for the purchase of books, and certain works were published which were placed in the library.

Mr. WRAGG: Yes, and the old rubbish sold.

Dinner Committee.

On the motion of Mr. TRIGGER, Messrs. WRAGG, SIMPSON, and MULVEY were elected as the Dinner Committee.

The SECRETARY having read the Obituary List, the meeting terminated.

A Special Meeting.

A special meeting of the Council was then held for the purpose of considering a notice of motion by Mr. Barrett. Present: Professor Penberthy (President) in the chair, Professors Williams and Pritchard, Messrs. Edgar, Mason, Mulvey, Simpson, Trigger, Villar, Dewar, Barrett, and A. W. Hill (Secretary).

The SECRETARY read the notice convening the meeting.

Mr. BARRETT: With regard to my notice of motion I have been asked by several members of the Council who have been obliged to leave, to defer my motion until the next meeting, and I have very readily consented to that course. I have, therefore, to ask you to allow me to withdraw the motion at present, and allow me to bring it on at the next meeting of the Council.

Professor DEWAR: I beg to second that.

The PRESIDENT: Mr. Barrett has asked to be allowed to withdraw.

Mr. TRIGGER: Altogether?

Mr. BARRETT: No, sir.

The PRESIDENT: Withdraw it to-night.

Mr. BARRETT: I do so at the urgent wish of those members who have left this meeting.

The PRESIDENT: If you will permit Mr. Barrett to withdraw, you will kindly signify the same in the usual manner. He wishes to withdraw the motion from this meeting and defer it to another meeting.

Mr. TRIGGER: No, Sir, withdraw it altogether.

The PRESIDENT: He wishes to defer it. Is it your wish that Mr. Barrett be allowed to defer this?

The motion for withdrawal was negatived.

The PRESIDENT: I am afraid I must decide that the matter shall be discussed now.

Mr. BARRETT: Inasmuch as you have decided to consider this question to-day I am sure you will give the matter your careful consideration, and I rise therefore to move the following, of which I have given notice:—

> That the Council may relieve a student or intended student of one or more of the subjects of the professional examination provided the Council is satisfied that such student or intended student has received an adequate training and passed a sufficient examination in the subject or subjects in respect of which relief is sought.

I know you will agree with me that any question dealing with the alteration of a bye-law, and a *fortiori*, one which, if adopted, will become at an early date a new bye-law, is a subject of very much importance, and therefore I do hope you will not rush this matter to-day, even though you have been detained here for a considerable time. I desire to say at the outset of my speech that I was induced to bring this matter before you for this reason, that on the 20th September last an examination committee meeting was held here, and on that occasion a gentleman who had been highly trained and who possessed a high degree was desirous of becoming a veterinary surgeon and he appealed to us, and I think very rightly and wisely, to ask us if we could not give him relief in respect of those subjects in which

he had already been highly trained. At the moment there was not one of us who was sufficiently familiar with the bye-laws to give a decided opinion, and upon consulting them we were very much surprised to find that we were quite unable to give any relief, and consequently with very much regret we were obliged to inform him that no relief could be given, and that he would be obliged to go through the regular course and pass through the regular examination before receiving the diploma of the Royal College of Veterinary Surgeons. When I drafted my motion I was informed by one member of this Council, whose opinion I very much respect, that he agreed with my intention but not with the language I had employed to clothe the proposed bye-law. I wish to say at the outset of my speech that I am not wedded to the form of language which I have employed, and, therefore, if there is one member of this Council who has come prepared to support me who has drafted a bye-law, the language of which is plainer and clearer than that which I have employed, I shall be willing to accept the alteration with the greatest of pleasure. The motion, to my mind, is rather a complicated one, inasmuch as it is rather a lengthy motion, and therefore I would, in the first place, very carefully draw your attention—

Prof. WILLIAMS: I rise to a point of order. I think in an empty house like this the discussion should be adjourned to the next meeting.

The PRESIDENT: We have voted on it Professor Williams.

Prof. WILLIAMS: I mean an adjournment of this discussion which has now commenced. I think this matter which has been opened should be adjourned. I think it should be deferred. This is a very important matter, and we have a very thin house, and I think, with the consent of the meeting, the subject should be adjourned now it has been opened. We cannot consider the question this evening.

The PRESIDENT: It is a very important matter.

Mr. SIMPSON: The motion which was carried was to the effect that Mr. Barrett should go on with his notice of motion. The proposition by Professor Williams now is that the discussion of this question be adjourned. I may say that had I seen the language of my learned friend's brief when I voted I should have been inclined to vote the other way; but, under the circumstances, seeing that it would be more convenient to Mr. Barrett, the mover of this proposition, and certainly more convenient to many members who are present and are shortly leaving, to adjourn the subject, I support the proposition made by Professor Williams.

Mr. BARRETT: May I say that one member has come up, I believe, purposely to take part in this discussion, and I wish to express my regret to him personally if this course is adopted. If I had known he was coming here before being asked by the other members to withdraw this, I should certainly not have agreed to do so. I was not, of course, aware that he was coming to take part in this discussion at the time. I ask you not to give a hasty opinion on the subject, whether you are opposed to me or whether you agree with me.

Prof. PRITCHARD: I fully endorse everything Prof. Williams has said with regard to this matter, and I am sure we will fall in with the feeling of Mr. Barrett in not dealing hastily in what he has to place before us. I think Mr. Barrett himself would rather have an early part of the afternoon than an evening, when we have had a fair amount of work to get through. Therefore I heartily support what Professor Williams has said.

The PRESIDENT: There is a proposition to test the feeling of the meeting as to whether we shall proceed further with the consideration of this matter. If there is no amendment I am obliged to put that motion to the meeting. It is quite open to Mr. Barrett to move an amendment if he desires to go on.

Mr. BARRETT: No, sir; I feel that I should like you to adjourn, because I

think many of you are tired and want to leave, and will not give the subject the attention which it merits, whether you are opposed to me or not.

Prof. Williams' motion was then carried by 9 votes against 5.

The PRESIDENT: The discussion is now adjourned.

Mr. VILLAR: I beg to propose a hearty vote of thanks to our President for the very nice way and the able manner in which he has occupied the chair to-day.

Mr. WRAGG seconded the motion, which was carried by acclamation.

THE CENTRAL VETERINARY ASSOCIATION OF IRELAND.

A MEETING was held at the Hamman Hotel on Thursday, the 25th March. Mr. John Freeman, F.R.C.V.S., occupied the chair, Mr. A. Watson, M.R.C.V.S., acting as secretary. There was a large and representative attendance of the members of the profession from all parts of Ireland. After a lengthened discussion on the position occupied by veterinary inspectors under the Local Government Bill, a Defence Committee was formed, who were authorised to seek the opinion of counsel as to the best possible means to adopt to secure the best terms under this Act. The members present urged the necessity of this action, as they felt that the Boards of Guardians do not esteem in a proper way the services rendered by them in the eradication of disease, and the more particularly from a public health point of view.

ANDREW WATSON, M.R.C.V.S., *Hon. Sec.*

THE YORKSHIRE VETERINARY MEDICAL SOCIETY.

A SPECIAL MEETING was held on Thursday, March 17th, Mr. W. F. Greenhalgh, President, was in the chair, and the attendance included Messrs. A. W. Mason, Leeds; T. Fletcher, Sheffield; J. E. Scriven, Tadcaster; J. Clarkson, Garforth; S. Wharam, H. G. Bowes, and A. McCarmick, Leeds (Hon. Sec.).

Mr. CLAKLON proposed, and Mr. SCRIVEN seconded, that we join the Lancashire and Midland Counties' Associations in running candidates as before for the forthcoming election of Council, R.C.V.S. The resolution was submitted to the meeting and carried unanimously.

The PRESIDENT proposed that our candidate should be Mr. A. W. Mason, Leeds. Mr. FLETCHER seconded the proposition, which was carried unanimously.

Mr. MASON thanked the Society for again bringing him forward as their candidate, and said, if elected, it would be his endeavour, with health and strength, to do his best, as he had always done in the past.

ANTHONY MCCARMICK, *Hon. Sec.*

LINCOLNSHIRE VETERINARY MEDICAL ASSOCIATION.

THE sixteenth annual meeting was held at the George Hotel, Grantham, on Thursday, March 15th. The chair was taken by the President, F. W. Wragg, F.R.C.V.S., and the following were also present: Prof. W. Pritchard, Capt. B. H. Russell; Messrs. H. Howse, Thos. Holmes, T. B. Bindloss, R. W. Clarke, B. Freer, F. L. Gooch, R. T. Hardy, T. A. Rudkin, Jas. Smith, E. C. Russell (Hon. Sec.), and W. Mason (Leeds).

The minutes of the last meeting were read and duly passed, and the Secretary reported the receipt of several letters of apology from various members unable to be present, several regretably through the prevailing epidemic.

The TREASURER (Capt. B. H. Russell) presented the balance-sheet for the year, and stated that the balance would have appeared considerably larger but for the fact of several subscriptions being outstanding.

On the proposition of Mr. RUDKIN, seconded by Mr. HARDY, the balance-sheet was passed.

Correspondence.

A letter was read, requesting that the names of members intending to be present at the complimentary dinner of the Royal College of Veterinary Surgeons on Friday, March 4th, should be forwarded as early as possible, and Mr. HOWSE stated he would be glad to forward the same.

The SECRETARY stated that a communication had been received with reference to the formation of the Victoria Benevolent Association, but the minutes of the previous meeting on the matter having been read, the subject was dropped.

Satisfaction was expressed at the alteration of the rule of the Veterinary Benevolent and Mutual Defence Society, whereby any member of the profession, or his widow, could now benefit, in lieu of members of the Society only as heretofore.

The Secretary passed round to the members a newspaper cutting referring to the death of Mr. Mason, of Gainsboro', who had for several years attended the meetings of the Association as reporter.

Mr. GOOCH referred to Mr. Mason as having most ably performed his duties, his personal knowlege of technical terms having assisted him in this respect, and moved that the record of Mr. Mason's decease be placed on the minutes.

Professor PRITCHARD seconded, and the proposition was carried.

Election of Officers.

Mr. Thos. Holmes was elected President for the coming year, on the proposition of Mr. GOOCH, seconded by Captain B. H. RUSSELL, who referred to the long connection of Mr. Holmes with the Society, and his great interest in its work as instanced by his frequent attendance.

Mr. HOLMES, in thanking the members for the honour paid him, said he foresaw the difficulty he would have in following so able a chairman as Mr. Wragg, but he would gladly perform the duties to the best of his ability.

Messrs. Wragg, B. Freer, and Howse were elected Vice-Presidents.

Captain B. H. Russell was re-elected Treasurer, Mr. GOOCH stating the appreciation of the members of the able and careful manner in which the Treasurer had managed the finances of the Society, and trusted that he would be able to successfully attain the balance which he had stated would be the case if no outstanding subscriptions had to be reported at the next annual meeting.

Captain RUSSELL thanked the members for their continued confidence, and trusted that his occasional reminders or duns for subscriptions in arrear would lose him no friends, he hoping that the omission of some members to send their subscriptions arose from their time being so fully occupied with their professional duties.

Mr. E. C. Russell was re-elected Hon. Secretary, Mr. RUDKIN remarking that the duties had been ably carried out by Mr. Russell, who had worked hard for the Society during the year.

Mr. RUSSELL stated he was obliged to the members for their esteem of his efforts, and would be pleased at all times to do anything to further the interests of the Association, and trusted the members would favour him with their names and subjects for future papers.

Eyes, Eyelids, and Eyebrows.

Lecture by Professor Pritchard, F.R.C.V.S.

Professor Pritchard, on rising, stated that the most difficult part of his duty on this and similar occasions, was that of selecting a subject, for the ground had been so frequently trodden at various lectures and papers at these Associations that it was now almost a necessity to get a friend to choose a subject for a speaker to talk about, and in this instance the President had been the friend who had so chosen. On previous occasions he had been twitted with the fact that he had told them nothing new, and at his last lecture at the Central Veterinary Medical Society he was "heckled" considerably because of that fact. To-day he had nothing new to tell them, nor did he think it exactly necessary to do so if he could only direct their interest towards some fact that they had learned, and refresh their memory therewith, for in his opinion much of the new matter announced was worse than worthless. The ground selected for his present talk would easily afford subject matter for 20 or 25 lectures, therefore he had to undertake in the short time at his disposal, to reduce his remarks on the subject to something that would remind them of what they already knew, and revive and refresh their interest in it.

Eyes.—He would lead off with a bold statement that the eyes had never seen anything nor ever would—the sight being simply an impression of the object looked at, derived from the light thrown off the object into the centre of the eye, and therefore instances of vision were due to the capability of the eye of dealing with such rays of light. It was a popular and common error that some animals could see in the dark. It was a great mistake since none were capable of so doing, but it was true that different animals could see in different powers or degrees of light than others. The eagle, for instance, soaring to the heavens and "staring the sun in the face" could see in that degree of light, but human beings could not. It could deal with a stronger light than man. So, conversely, bats and cats, commonly supposed to see in the dark, could no doubt see in a lower degree of light than many other animals, but not in absolute darkness, any more than a human being.

The horse's eye, as that of most animals, consisted of a central transparent portion, a convex surface, transparent, but only transparent when moist. It was composed of a horny material in a number of series of layers, the possession of which caused resistance possible, and so it was seldom that an absolute rupture was seen, or in such a case, considerable and sudden force had been the cause. Looking at its eye, there was not, as a rule, what is commonly termed the white of the human eye, but the same structure exists hidden from view by pigment in the connective tissue uniting the mucous membrane to the front of it.

Colour.—There were various coloured eyes in animals, but that of the horse, as a rule, was hazel brown, that of the cat is frequently golden, of the dog hazel, and those of the human being are of a variety of colours, but the only portion which gave colour to the eye was the iris. This iris was a remarkable structure, and in the centre of it was an opening of the pupil or the pupillary opening. It was curious how the shape of this varied with different animals, and with the same animals in different circumstances or conditions.

In the horse the shape is ovoid in a transverse direction, in the human subject circular. In the feline tribe, ovoid or elliptical from above downward, or from below upwards. This was at times overlooked by those who were not constantly in touch with the the subject. For instance, one of the greatest of our English artists had made such a mistake in a painting of fox cubs, and placed cats' eyes into canine animals' heads. As an instance of the difference

of shape of the pupillary opening in the same animal under different conditions, that of the cat with its powerful pupillary opening would serve as an example, reducing itself into scarcely a line from above downward, till one wondered how it was possible for it to see at all, while the same animal in a low degreee of light would be seen with a large circular orifice, like a ball of fire, as commonly expressed. Not only in the cat was this alteration of shape in different degrees of light to be found, but in most animals. In the human eye the size varied from a millet-sized opening in a strong degree of light to one of nearly a quarter of an inch diameter in a low degree of light. In the horse not only was there a decrease or increase in the size of the opening, but also an alteration of shape in various degrees of light. In a low degree the opening would be almost circular, instead of the ovoid or narrow oval as appearing in a high degree of light. Another circumstance, in which the horse was unlike many animals, was that instead of the opening altering quickly under an artificial light (as that of a human being would) it altered very slightly and slowly. This made it possible in a dark box, by the use of a match or candle, to examine the horse's eye thoroughly for a short time. The eye of the human subject, however, altered as speedily, or nearly so, with the light of the candle as with that of the sun, the degrees and light being the same. How was this brought about? They were told by some of the leading physiologists of the day, and, in fact, it was the generally accepted theory, that this decrease was brought about by the action of the muscular tissues of the eye, but he, the lecturer, did not believe it. He expected he would be contradicted and receive a considerable amount of criticism for this statement, but that he could not help. His own idea, and he had held it for some considerable time, was that this increase was due to a relaxation of the muscular fibre, and the entry into the structure of the iris of an elastic material. As soon as the animal lost power over its eye (whether dead or alive), the pupillary opening dilated, or one saw the "eyes going." This was always the case, and to the fullest extent. One of the first effects of a sudden blow on the head was a dilated condition of the pupillary opening. The iris lost its control, and the pupil dilated. The same effect could be produced by the placing of a powerful sedative on the inner canthus of the eye, thus robbing the muscular fibre of its power, and the opening consequently dilating.

How few knew that an oyster could not open its shell? It could close it by the contraction of the muscles on the sides of the shell, but the shells were opened by the action of a portion of the elastic substance uniting the shells together. The same thing occurred in connection with the opening of the pupil of the eye. He would now pass from the iris to the lens, that structure in the centre of the eye which converged the rays of light to a greater extent than any other portion. He often saw at public auctions that various people, and he was astonished to find some veterinary surgeons among the number, looked for cataract in the central axis of the eye. They would never see small cataracts in that way. He would only look there to see if two pupillary openings were of the same size, but to see if cataract existed he would stand shoulder to shoulder with the horse, and look obliquely across the eye or surface of the lens, and this, he believed and stated advisedly, was the only way of detecting a cataract. He had made many examinations with the ophthalmoscope, but had never been able to satisfy himself as completely as by using the naked eye with the horse's face to the light. If the animal was placed in the dark, and a lighted match or candle moved in front of the eye, and reliance placed in this test alone, blunders would be made. As an instance, quite recently he had been called to see a horse which had previously been examined by six veterinary surgeons, the opinion being divided as to the

existence of cataract or not. He examined it carefully in a dark box, as before described, and could only see a slight and indistinct opacity on the lens, but on placing the horse's face to the light, and a fair pair of spectacles to his own eyes, he could distinctly see, not a half opaque substance, but one quite white and of the size of a pinhead.

The position of the eyes was worth a remark or two. This differed in different animals. In human beings the central axis of the eye was directly forward, *i.e.*, to the front, and by movement of the head, so sight was possible to right or left, or even, to a certain extent, in a backward direction. Not all animals had this, however. For comparison, the opposite, hares and rabbits had the eyes on the side of the face, the consequence being that they saw at the side and behind; as instanced by the hare, undisturbed, running in its course into the arms of a man stooping down; or, if disturbed, by its zigzag course in its endeavours to see what was going on in front, as well as at side and behind.

In the horse the position midway between that of the human being and the hare was to be found. The central axis being obliquely outwards and forwards. It was important to remember in this connection that it was possible for a horse to be sound in the eyes, and yet be an unsound animal through being "hare-eyed," or having the eyes situate more to the side of the face, and therefore inclined to see too much behind and not sufficiently forward. Blinkers were of little use to such a horse, as he could see behind as well as forward.

Eyelids.

There was no organ in the body without its assistants and its assistant appendages. The eyes had a number, and perhaps the most important was the eyelid. The fore portion of the eye must be kept moist or it was absolutely useless, and it was kept so by a quantity of fluid poured on to upper portion of the globe of the eye and utilised by the lids, without which the eye would be absolutely useless. The unpleasant sensation caused by an endeavour to keep the eyelids from "blinking" would occur to one as an instance, this being caused by the necessity for the eyelid to distribute its quantity of lachrymal fluid. The lid had very vascular mucous membranes, and by their means the lachrymal fluid, or tears, were used, the front of the eye kept moist and transparent. If the eyelid was torn (and the torn portion removed), the eye would become inflamed and ultimately, as a visual organ, useless.

In sleep the eyelids shut out the rays of light. Growing from the edges of the lids were beautiful pointed hairs or eyelashes. Most hairs, those of the head, mane, or tail, were of the same size throughout their length, but in the eyelash from the base or growing portion of the hair it was broad and gradually became pointed, thus differing from hair generally. In the human eyelid, the lashes grew all over the edges of each—better in the upper lid. In the centre of either lid, the eyelash was longest and thence to the corner of the eye, the lashes decreased in length. In the upper lids they curved upwards towards the point, and in the lower lid downwards. By examination in a mirror it would be found, if the lids of one eye were slowly closed, that the points would meet in a beautiful manner, almost lash to lash.

In animals, the horse as one of many, wherever the bony portion of the brow, or that portion of the skull was prominent, there was an absence of lashes on the inner half of the upper eyelid. If they examined the lower lid there would be found only rudimentary specimens of eyelashes, and here he would remark the fact that eyelashes not only shielded the eye from foreign bodies but also from an overabundance of light. This was the case in the dog, cat, canine and feline tribes

generally, but in the pig, as in some other respects, a great similarity appeared to the human being, in the distribution of the lashes. There was also a beautiful arrangement to prevent the passage of tears on to the side of the face, two sets of glands which pour exactly on to the margin of the lids a secretion of somewhat greasy fluid just sufficient to prevent the tear running off on to the front or side of the face. Of course in an exposure to cold or wind or other extraordinary circumstances the case would be different.

This provision he ventured to think was one of the finest examples of animal economy. If there was a normal quantity of fluid, it would not flow on to the side of the face but a large portion passed away as vapour, instance the vapour arising from the front of a horse's eye and visible at a low temperature. The inner canthus, too, of the eye was the least trifle lower than the outer, so that any surplus fluid was passed into the inner corner of the eye and thence through two small tubes, terminating in one, and found its way into the nose.

In examining a horse for soundness, if there were excoriations down the face and the hair gone, he would pronounce the horse unsound. In the human being the case is not so serious as it can be remedied, but in the horse no such operation can be performed as placing a tube from the inner canthus of the eye into the nostril.

Eyebrows.

In the horse there are, properly speaking, no eyebrows. A few long hairs on the outer part of the upper eyelid and a few rudimentary lashes on the lower lid are apparent, but the horse possessed no brows, properly speaking. If there were any they would be absolutely useless. In the human being they were often looked at from an ornamental point of view, being frequently light, dark, bushy, or slight, but their chief use was really for shielding the eye from an over-stimulating quantity of light, as might be noticed from the fact that in a high degree of light not only were the lashes brought down, but the brows also. But in the horse they would be useless from the fact that most frequently his head was carried in a line with his body, as when galloping, racing, etc. In lieu of this, however, nature has provided the horse with a substitute, which has no necessity of adjustment, on the upper margin of the pupillary opening—the corporanigra, or black bodies—and these were more effective in their purpose than brows could possibly be, or than the lashes of the human being.

He concluded by expressing his appreciation of the patient hearing accorded him, and if he had succeeded in refreshing their memory, he had accomplished what he had intended.

(*To be continued.*)

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

THE spring quarterly meeting was held at the Grand Hotel, Manchester, on Thursday, March 3rd. Tea at 5 p.m., business at 6 p.m. J. McKinna, Esq., F.R.C.V.S., presided, and the following members also attended: Messrs. J. B. Wolstenholme, J. Abson, H. D. Chorlton, Henry Hall, J. H. Carter, A. H. Darwell, E. S. Gubbin, A. Munro, Alex. Lawson, Wm. Stothert, F. E. Wood, F. B. Pearson, J. W. Ingram, and Henry Locke (hon. secretary).

Apologies for non-attendance were announced from Messrs. W. A. Taylor, E. Faulkner, C. E. Challinor, Stafford, and Barker.

The minutes of last meeting were taken as read, on the motion of Mr. WOLSTENHOLME and seconded by Mr. DARWELL.

Elections and Nominations.

Mr. J. B. Collyer, M.R.C.V.S., Knutsford, was elected a member, the resolution being proposed by Mr. HENRY LOCKE and seconded by Mr. WOLSTENHOLME.

Mr. Wm. Stothert, M.R.C.V.S., Blackburn, was also elected a member upon the proposition of the PRESIDENT and seconded by Mr. ABSON.

Mr. WOLSTENHOLME proposed the election of Mr. H. H. Ferguson, M.R.C.V.S., Warrington, and the proposition was seconded by Mr. DARWELL.

Mr. WOLSTENHOLME, in Mr. Faulkner's absence, nominated Mr. W. G. Dixon, M.R.C.V.S., St. Helen's, for membership; and the SECRETARY nominated Mr. Alf. MacKenzie, F.R.C.V.S., Market Drayton.

The SECRETARY having announced the receipt of letters from Mr. R. C. Moore, Vet.-Lieut., A.V.D., and Mr. W. H. Bridge, of Bolton, tendering their resignation, the same were accepted on the motion of Mr. CARTER, seconded by the PRESIDENT.

Mr. ARSON gave notice of motion that the spring meeting will be held on the first Thursday in April instead of March as heretofore, or other date as may be deemed desirable.

Letters from the Southern Counties V.M.A. and Midland Counties V.M.A. having been read, Mr. A. LAWSON proposed, Mr. CARTER seconded, and the PRESIDENT supported, that Mr. Abson be the nominee of the Lancashire Association.

Mr. ABSON, acknowledging the honour they had conferred upon him, said he would endeavour to fulfil the duties which he hoped to undertake when the election was over, and do his best for their Association, the rest of the societies, and the profession generally.

Mr. H. D. CHORLTON proposed that the usual election committee, consisting of the officers of the Association with power to add to their number, be formed to carry out the details in connection with the forthcoming election to Council.

Mr. HALL seconded the proposition.

The National Benevolent and Defence Society.

The SECRETARY read a circular letter, which had been sent by Mr. Sam. Locke, the Secretary of the National Benevolent and Defence Society, to all the veterinary medical societies, drawing attention to the revised rules of that Society.

The PRESIDENT pointed out that Mr. Sam. Locke considered it an extremely important subject. The benevolent as well as the defence branches had been altered so that any member, though he may not be a member of the Lancashire Association, could receive help. This, in itself, was a great inducement for more members to join.

Mr. ABSON considered too pessimistic a view should not be taken of the new Benevolent scheme, which after all would not make much difference to the National Society, and credit must be given the promoters for being actuated by the best and kindest motives in inaugurating their new project. The best course, he thought, was to aid rather than deter them.

Mr. ALEX. LAWSON: I do not think we take any antagonistic view. It seems to me that both societies are working for the profession—I take it this is the oldest society—I suppose the new scheme has been set on foot because they had no Society in the South of England and because we would not remove our quarters there. Personally, I do not see that we are in opposition at all to them, or that they are in opposition to us.

The PRESIDENT: Why not keep it national?

Mr. LAWSON: Our position is too strong to amalgamate with any new society.

The PRESIDENT: It seems to me, as the position is now, that there are two local societies. This has been put up by our southern friends as the "Manchester" society, but for my own part I have always looked upon it as the "National."

Mr. ABSON: Of course, our new rules will remove the accusation, which has been made against us, that we have not doled out our funds to needy persons outside the membership of the Lancashire Veterinary Medical Association. Now, in future, we are taking powers under the new rules whereby we shall be able to dole out our benefit as they are doing.

Specimen.

Mr. WOLSTENHOLME exhibited a somewhat uncommon specimen, explaining that it had been sent to him by Mr. Buckley, of Burnley, who in a letter stated that he knew nothing of its history except that it was a section of enlarged knee (weighing 15lbs.) from an aged cow. Mr. Wolstenholme said they would see the abscess portion, which varied from a cream-like pus to the caseous kind.

A vote of thanks was accorded to Mr. Wolstenholme for the pathological specimen, upon the proposition of Mr. WM. STOTHERT, seconded by the PRESIDENT.

SOME RISKS WE RUN IN CERTIFYING SOUNDNESS IN HORSES.

BY JAMES ABSON, M.R.C.V.S.

Mr. President and Gentlemen,—In a weak moment I gave way to the persuasive powers of our President and promised to read a short paper. I have only regretted it once, and that ever since, but only from a feeling of absolute inability to do justice to any subject I might select. But we all owe a duty and an obligation to our association, and I must confess the time has arrived to fulfil my part of that obligation.

Horse purchasers who employ veterinary surgeons to examine for them may be divided into two kinds—those who really understand the horse and his variability, and those who do not. Every practitioner of experience would prefer to deal with the first kind, but he cannot escape the second. For the client who knows a horse, examination is a comparatively easy task—indeed, I may say a comparatively pleasant one—for he understands that perfect usefulness is quite compatible with the existence of small technical unsoundnesses. For the client who does not understand horses, I almost invariably find it an unthankful job. He often declines to buy a useful horse that has some trivial unsoundness which self-protection obliges us to note in our certificate, and he traces with disgust every lameness or sickness which may, and probably will if a young animal, arise during the next six months to unqualified negligence on the part of his veterinary examiner.

As a horse may be absolutely sound to-day and lame or ill the next day, without any previous sign to lead the best judge to anticipate such an event, it is too evident that the purchaser without experience or knowledge may occasionally feel dissatisfied. The margin between health and disease, between soundness and unsoundness, is so infinitesimal that cases must frequently arise where differences of opinion exist. This is bad enough in the case of ordinary defects, but there are greater difficulties when we come to conditions which only show themselves under special circumstances or at uncertain times.

The English law recognises only soundness and unsoundness. In this matter the French law is more logical, and takes cognizance of unsoundness which exists but may not be evident. The English veterinarian is expected to discover all defects in a half, or at most, one hour. The French veterinarian is only required to find what is apparent, and the law protects the purchaser against the latent or undeveloped defects, by fixing a time within which the horse is returnable to the vendor, should any appear. Fortunately our law is not too pedantic, and before we are found guilty it is necessary to prove that we have been negligent or ignorant.

Our responsibility to a client is not only legal. There is another and an important side. We may make a mistake and not be forced into a court of law, but we may lose a good client, and also some reputation, for failing to discover what was not discoverable on an ordinary reasonable examination, or even on an extraordinary examination.

The question arises, "Is our examination sufficiently minute and exhaustive?" I speak of course, of a painstaking performance, under ordinary circumstances; of an examination more careful and minute than would be undertaken by most of us if we were about to buy the horse ourselves.

Is the time occupied enough? The visual and manual examination need not occupy a long time. The gallop for wind ought to be thorough and then a period of rest follow, and after that a final run out should be insisted on.

Are our opportunities always sufficient for a full test? It must be admitted they are not. Sometimes the light is not very good for the eyes, when the candle test has to be entirely depended upon, for few of us use the ophthalmoscope. Again, sometimes the space and ground for a gallop is very cramped. I have frequently had to gallop horses in a London dealer's yard. Often there is no forge or farrier within miles of the place; should we then carry tools with us and remove the shoes? Doubtless skill, tact and experience may often enable a man to steer clear through these difficulties, but—what possibilities of error exist!! What an appalling list of risks we have to face in the course of a year!! We all know them, but very probably we do not all estimate them at the same value, and to-day I have ventured to bring them before you, by way of obtaining some discussion on them. Our united efforts may serve to enlighten and benefit us all.

The unsoundnesses which may be overlooked are divisible into two classes:

(1). Those not apparent by an ordinary examination.

(2). Those not apparent even by the most thorough and searching examination.

I know this classification is open to the objection that the words "ordinary" and "thorough and searching" may be differently defined by different men. The discussion will at any rate help to clear up this point.

Defects not apparent by "Ordinary" Examination.

Teeth.—How many of us at an ordinary examination take means to ascertain that no diseased molars exist?—Such defects we know are not common, but they are to be found more frequently than renders safe an examination which ignores their existence. Some defects of teeth are so serious as to interfere with a horse's condition, and therefore are real unsoundness, but we cannot trust to want of condition as a safe indicator, as there are grave defects which by absence of work and careful feeding, may give no sign of their existence. Away from home a mouth gag is seldom available, but without such an instrument no proper examination of teeth can be made. I think that, to avoid a charge of negligence, all horses examined on our premises should have their molar teeth properly examined, but I do not

think a charge of negligence could be sustained in cases where we overlooked dental mischief in an examination conducted miles away from necessary appliances.

Whilst examining the teeth for age, we usually notice any abnormality of the jaw. Injury by the bit, producing partial necrosis, is easily seen when low down, but it occasionally exists nearer to the first molar than to the corner incisor, and I have seen it in both these positions. It is more easily felt than seen, so it is a good practice to run the finger along the jaw when opening the mouth. I think this is important too, from another point—it may prevent a nasty accident when the horse is put into harness.

Eyes.—There are not many defects of the eyes which we cannot easily see by an ordinary examination. The most minute cataracts are not always easily seen, but in this condition they become differences of opinion more than questions of negligence. Complete blindness of an eye is a serious defect to overlook, and there is a rare disease in which very little, if any, change of the organ exists to attract attention ; I allude, of course, to amaurosis or gutta serena. This it is quite possible an examiner might fail to detect, if he were not guided to visual disease by the movements of the horse when run out in hand. But if these indications did not arrest his attention, the appearance of the eyes might be overlooked.

Feet.—Incipient navicular disease is accompanied by no visible change in the foot—that comes later—and the only symptoms of the disease are "pointing" or lameness. The first few paces taken by the horse on leaving the stable are sometimes indicative, after which no want of freedom is further noticeable. Again, defective action may be discernable after a gallop. No worse mistake could be made than to pass a horse sound that shows navicular disease after the purchaser has got him home. And yet such a thing is possible to even a skilled practitioner who has been guilty of no carelessness. Premonitory shortness of gait when both feet are affected is perhaps always seen, but when disease attacks one foot only, it may appear quite suddenly, especially when work is resumed after a long rest.

A sandcrack is, as a rule, easily seen, but modern art has invented a method of treatment which might cause the condition to be overlooked. The crack is cut out from top to bottom, and the groove thus formed is filled with a hard wood plug or with a preparation of gutta percha. This may escape attention, especially if the feet are not washed before examination. Only a few weeks ago I had an illustration of the neatness with which this can be done ; fortunately, I discovered it whilst having a fore shoe removed.

How many of us always pick up the hind feet when examining ? Not to do so means the possibility of not detecting a limited case of canker. This occurred to a friend and brother practitioner only a short time ago. We might plead that it was not customary to lift the hind feet, but such plea, I fear, would be a weak excuse to go before a jury.

Then comes the question of shoes—should we always remove them, and from both fore and hind feet ? I think it is a golden rule to remove at least the front shoes, as seedy-toe and corn may be easily overlooked unless we do. In the case of a very valuable horse it is a safe proceeding also to remove the hind. I know one case in which a practitioner, a personal friend of mine, passed a horse as sound that had a seedy toe in a hind foot, two inches long and running up to the coronet. The horse was not lame, but but when he was shod the farrier discovered it, and although no lawsuit followed, a good client was lost. While the shoe was on this foot there was no sign of seedy-toe. When a corn exists that does not cause lameness, its discovery probably prevents further mischief, and a mention of it in the certificate protects us, and does not prejudice the horse.

Unnerved Limbs.—Unnerved limbs are undoubtedly unsound, and when

nerves have been divided in the usual position, above the fetlock joint, are not difficult to detect. But there are some cases even in this position where healing has been so well managed that very little can be felt, even when special care is devoted to the examination of this region. It is quite easy to overlook the cicatrix of the operation when the nerve below the fetlock has been divided. Two forms of neurectomy are dangerous traps for veterinary surgeons. They are becoming more often employed, and we must keep a sharp eye on the seat of these operations. In the fore leg median neurectomy is employed, for diseases of the knees, and we must look out for a scar on the inside of the leg just below the elbow, at the posterior edge of the radius. If this exists it suggests the necessity of testing sensation in and around the knee joint. In the hind limbs division of the posterior tibial nerve is sometimes resorted to, and a scar on the inner surface of the tendo-achilles, a few inches above the point of the hock, should remind us to prosecute our examination further.

Broken Wind.—I cannot claim any practical knowledge of "loading" or "setting" broken-winded horses, but I am told it is possible to effectnally disguise the double movement of the abdominal muscles. I cannot however think that a horse thus "loaded" would keep his secret if put to the test of a good gallop. For a fraud of this kind we might not be held responsible in a court, but it is a damaging thing to pass such a horse as sound.

Heart and Lung Diseases.—Heart and lung diseases may exist and give little, if any, sign of their presence by an ordinary examination. To take the pulse and auscultate the heart are simple measures which should always be practised. They might indicate cardiac disease, but there are, I admit, conditions that even then might not be detected. I should decline to go into a witness-box and swear that a horse that had fallen dead from heart disease only three or four days after being passed sound, had his infirmity at the time of examination, and still more should I refuse to say that he must have shown some symptoms of its presence. I can point to a recent case where sudden death from heart disease occurred in a horse which, up to the time of his fatal attack, had worked regularly and without suspicion of any defect whatever. I had this same animal frequently under observation. I think you will agree such cases are only too common.

Heart and Lungs.—Another delicate question arises in the case of horses that have recovered from pneumonia, and have to all appearances regained their normal health. There may be a portion of hepatized lung remaining, and auscultation is by no means to be relied on to discover it. Such a horse may stand the test of examination, and yet the very gallop we give to try his wind may cause a recrudescence of his former malady and a fatal break-up of the solidified lung. Such a case might possibly lead to an action for damages, but I do not hesitate to say that the facts are compatible with skill and care on the part of the veterinary surgeon who examined the animal.

Fractured Pelvic Bones.—Fractured pelvic bones cause various deformities, some slight that they may easily escape attention. Fracture of the tuberosity of the ischium is not common and may readily be overlooked. Fracture of the angle of the ilium, constituting what is usually known as "down in the hip," "dropped hip," or "hip off," is often apparent, but I have known cases which were hardly noticeable until one was on the driver's seat with the horse in harness. I remember a mare that was passed by a veterinary surgeon with the delect, and it was not discovered until three months after the examination. Such a fracture is of course harmless when repair has completed itself, but it is most objectionable to pass a horse sound without mention of a defect which must sooner or later be detected by the owner.

Schirrous Cord.—A small scirrhous cord may exist for many weeks without giving much indication of its presence. A fistula may form, discharge, and

heal, to be followed later by reappearance in another part of the scrotum. I an examination were made in this interval we might easily overlook the defect. We don't all handle the scrotum of every horse we examine, but ought we not to do so? I discovered a schirrous cord in a draught horse quite recently. I noticed he had the appearance of a stallion, and handled the scrotum for obvious reasons, when I found a small fistula, discharging pus. He had, I learned, been castrated about three months. But I had a narrow shave of passing this horse with his schirrous cord.

Scrotal Hernia.—Scrotal hernia in geldings is very uncommon, but it must not be overlooked, especially in these days, when small entire horses with stepping action are castrated late in life. I know one case where a purchaser lost his horse, from strangulated hernia, only a few weeks after possession. This attack was not the first the horse had suffered from, but the previous ones were in the time of the former owner.

Tail.—The tail usually obtains little notice in an examination, and I should be sorry to say that a recently docked horse was not sound, but it must not be forgotten that he has an extra liability to tetanus infection. Sometimes docking leaves a nasty granulating sore stump with possibly a piece of dead bone partially buried in it. This condition should not be overlooked and in view of any trouble occurring with it afterwards, no harm can arise from the mention of it in the certificate.

Defects not Apparent on a Thorough or Searching Examination.

By a thorough, in contradistinction to any ordinary examination, I mean one which would leave the horse under our notice for say 24 hours, and thus enable us to adopt any series of tests we desired. Now even with this time at our disposal in which to make a thorough examination there are diseases which might easily escape us, indeed there are some which we could not, even with the exercise of all human care and skill, detect. Yet such are unsound, and we daily give certificates saying: "This horse is sound."

Embolism of Iliacs.—Take for instance embolism of the iliacs. We all know this disease requires some continued muscular action to induce any indication of its presence. A horse might be submitted to all the tests usually considered necessary to detect every unsoundness and yet, in this disease, if the horse be not sometimes kept at a fast pace for 15 or 20 minutes he may not show any lameness. I know the disease may manifest itself in much less time than this, but I am only indicating what is possible. When the lameness does appear, it is so intense that a purchaser would think it impossible for a careful veterinary surgeon to have not discovered it. If a practitioner has fairly tested a horse for its wind by galloping and no sign of embolic lameness has appeared, I hold he is not blameable for passing a horse as sound with this defect, nor do I think a jury would convict.

Shivering.—Take, again, shivering, a disease equally well enough marked for a practical man to detect, but there are cases so slight and so intermittent that the most careful examiner may overlook them. I heard of one case in dispute which was sent to a veterinary infirmary and detained for a week. Only on the last day of the week was the disease detected, though the veterinary surgeon had applied various tests daily during that time.

I was told last week of a similar case, in which the practitioner who passed the horse had been told by the man in charge that the animal occasionally showed signs of the disease. For three or four Sundays the veterinary surgeon went and stayed a considerable time with a view of ascertaining if this report was true, but the horse failed to show any indication of the affection. On the last visit, however, the horse showed all the symptoms of a shiverer. This disease may well be classed as risky, as by shock, chills, and

other diseases it may in course of only a few days become so well developed as to be patent to any observer. If a practitioner has passed a horse sound, say, on Monday, it is quite possible that it may be found by another veterinary surgeon, on the Wednesday, a confirmed shiverer. Now, here is a case in which legal action may be taken, and yet the veterinary surgeon may not be to blame in the least. There are quite a number of intermittent diseases which no stableman would fail to notice, but which in their intervals of quiesence no veterinarian could detect a symptom of, and perhaps the best example is megrims.

Megrims.—Very rarely indeed does this disease show itself except when the horse is in harness, so that the gallop we give for the wind does not help to indicate it. Even a severe trial in harness during the winter months would fail to develope the symptoms of megrims in many horses that show the disease in a violent form in summer. No man can be held blameable for not detecting megrims, and yet when an attack occurs shortly after an examination in which the horse has been certified as sound, the position, to say the least, is awkward, and one which occurred to myself last spring.

(*To be continued.*)

SCOTTISH METROPOLITAN VETERINARY MEDICAL SOCIETY.

(*Continued from page* 259.)

Is Tuberculosis Hereditary?

The next business before the meeting was an adjourned discussion of a paper entitled, "Is Tuberculosis Hereditary?" which had been read at the last meeting by Professor M. Lauchlan Young, Aberdeen.

Professor LAUCHLAN YOUNG, at the outset, briefly recapitulated the main points of his paper. His contention was that tuberculosis was disseminated in this country more through infection than heredity, and he had endeavoured to prove it by a number of statistics. First of all, he said that tuberculosis was extremely rare in calves, and he quoted a number of authorities to show that upon examining numbers of calves of tender age tuberculosis was found extremely rare. He also quoted figures to show that on *post-mortems* being made upon the bodies, the percentage of tuberculosis rose as the animals aged. The percentage was quite low in young animals, but rose in yearlings, and was higher in two-year-olds, and still higher in full-grown animals, proving that tuberculosis was more common than in the case of young animals. From that he deducted that the older animals acquired the infection by contact, and he used arguments produced by medical men to prove the same facts in medical practice. He admitted, certainly, that the predisposition to tuberculosis was hereditary, but he took a strong stand on this point, that without the bacillus there could be no tuberculosis; and although predisposition was undoubtedly hereditary, and handed down from mother to offspring, yet if an animal could be kept entirely free from infection, and from getting the bacillus into the body, then that animal would never get tuberculosis. He held, therefore, that all breeding stock should be tested by the tuberculin test, and the reacting animals isolated, if at all practicable—the young animals being kept strictly apart from the reacting animals, and the milk of reacting cows should only be fed to calves after it had been boiled.

Mr. STORIE, East Linton, said he quite agreed with Professor M. Lauchlan Young that tuberculosis was spread through contact. He had recently had occasion to inoculate 17 cows in one byre, and 9 or 10 heifers. Of the 17

cows no fewer than 10 were found to be affected with tuberculosis, and of the heifers there were seven. Fortunately the proprietor was a person of means, and consented to have all these animals slaughtered. He had an opportunity of making a *post-mortem* examination on nearly every one of them, and it was found that tuberculosis existed in them all. Principal Williams had previously examined all these animals, and he was satisfied from their appearance that they were all suffering from tuberculosis, so that it was satisfactory to find from the *post-mortem* that they were all really in that state. In passing, he might say that he had a great belief in tuberculin. Personally he had found it to be a very safe test.

Principal WILLIAMS pointed out that in this discussion they should draw a difference between what was hereditary and what was congenital. If the disease was congenital, the bacillus was there before birth. It was quite true, however, that the bacillus of tuberculosis was very rarely found in young animals, and without the bacillus there could be no tuberculosis. But they should remember also that there were such things as spores as well as developed germs, and it was quite possible that these spores might, in some cases, take a long resting stage before they developed into germs. He had himself seen tubercular nodules in the brains of young calves, and it was a remarkable fact that tuberculosis, if it was present at all, was to be found in the brain of the young animal. As to the question of tuberculosis without absolute contact, he could relate the experience of a gentleman in Lancashire who possessed a splendid shorthorn cow, which won a lot of prizes, and also a valuable shorthorn bull. These were put together, and the calf was taken from the cow immediately after birth, put into a box by itself, and fed by the hand. The following year there was another calf out of the same dam, by the same bull, and this calf was treated in the same way. Both the bull and the dam were slaughtered and found to be tubercular. The first calf was killed when it was two years old, and it was found to be simply full of tuberculosis. He was fed upon boiled meal during his calfhood, and was never in contact with any other animal, but when two years of age it commenced to waste, and, on being killed, was found full of tuberculosis. The other calf did well for eighteen months, and was in beautiful blooming condition, but he gradually fell off, and, on being slaughtered, was found full of tuberculosis. How was this result obtained in both cases? It must be granted, of course, that it was an impossibility for tuberculosis to develop without the bacillus. There must be some living organism before the bacillus could be developed. It might be in the spore form, or it might be in the bacillus form. Granted there was no bacillus at time of birth, was it not the fact that there were bacilli surrounding everybody? There were thousands upon thousands of bacilli in the world, and people inhaled them every day. If they went to a crowded theatre they might be sure there were a lot of consumptive people there, breathing out the germs of the disease, but if a person had not the predisposition to the disease, he would not take it. One might, however, catch a cold at the theatre, and then die from consumption, the result of having inhaled some of the bacilli at the heated theatre. It was quite possible that the germs might lie dormant about a person for a long time. In children born of consumptive parents, for instance, the disease often remained undeveloped about the children till they grew up, and then it manifested itself. In the same way with cattle, there was a possibility that the germs might lie dormant until a given period of time, as was the case with human beings. He thought they must come to the conclusion that susceptibility was hereditary, but of course they must confess that the bacillus or its spore must be there, and there was a possibility of the spores having a resting stage lasting over many years. Like Mr. Storie, he could speak well of the tuberculin test.

At this stage the following letter was read from Mr. J. Cameron, Berwick-on-Tweed, a past president of the Society:—

I was very pleased with Professor Young's paper, and feel we are under a debt of gratitude to him for the same. It is a subject which will bear to be placed in the front line of investigation and discussion for years to come. I think those of us who are getting older will excuse others who do not arrive at the same conclusions on every aspect of the subject. There is so much yet regarding the life-history of tuberculosis of which we are ignorant, or comparatively so, that it is very unwise, I think, to come to absolute coaclusions. I think it very unwise to try to upset the old doctrine that "Like produces like," or believe that you can get a healthy, hardy product out of unhealthy, weakly parents. I think it very unwise to believe, finally, that an animal out of tuberculous parents, which does not react to tuberculin and appears healthy at one, two, three, or four years, is a safe animal to found the breeding herd of the rich, or put into a cold, damp, poorly lighted, and deficiently ventilated byre as the "one cow" of the poor man and his young family.

I do think and say that both the agriculturist and the householder have a claim on us to continue very active in our observations on this subject, and not be afraid to speak out—whether it pleases the Board of Agriculture or the medical profession or not. In the past we have been far too easy and faint-hearted. I again repeat that we ought to have a public *post-mortem* of some cow—at our summer meeting, say—which has been supplying the public with milk under the cognisance of the sanitary inspector and the medical officer of health. If the public only saw a few *post-mortems* of the sources of their milk supply, they would soon solve some of the vexed problems connected with tuberculosis.

Professor DAVIS said a good proof of the fact that tuberculosis was spread by infection was afforded by the fact that in places where it was the custom to keep the animals tied up in close ill-ventilated byres, they always found the disease rampant, whereas in Norfolk, where the cows were on the pastures all summer, and went about in the straw-yards all the winter, they rarely found a case of tuberculosis. Quoting from his recent experiences in Basutoland, where the cattle were allowed to run in the open, he said he never found a single case of tuberculosis. He thought this fact, which was borne out by similar experience in England, was a very strong argument in favour of the spread of tuberculosis by infection rather than by heredity.

In the course of the discussion which followed, several gentlemen cited cases that had come under their own observation of calves which had been separated from their tuberculous dams at birth, and which, when slaughtered as full-grown animals, were found to be absolutely free from the disease. There seemed to be a general agreement that the tuberculin test would prove correct in 95 cases out of every 100, although it was admitted that a real "piner" might not react to the test. It was also pointed out that if an animal had reacted to the test, it would not do so on the second or third injection of tnberculin, if the test were repeated after a short interval, so that the tuberculin test might be used in a fraudulent way by unscrupulous people.

Professor M'LAUCHLAN YOUNG, in replying to the discussion, declared that the thorough measures by the Government were the only means by which they could hopn to get the disease exterminated, and he hoped the Government would do something for them in regard to the proper manufacture and sale of tuberculin. With regard to the cases cited by Principal Williams he wished to point out that tuberculosis was infectious but not contagious, and did not require actual contact to spread the disease. The animals mentioned by the Principal might have inhaled a contaminated atmosphere. With certain exceptions he held most strongly that tuberculin was one of the best diagnostic agents that had ever been introduced into veterinary practice. If used in medical practice he believed it would prove equally invaluable. Most persons, however, preferred to go through life and die with the glorious uncertainty whether they were sound or unsound than to know positively

that they were unsound. If told they had the disease, that would simply hurry on the disease. If he had his own way he would test every animal and have it branded the moment it gave the first reaction.

On the motion of Professor W. O. WILLIAMS, a hearty vote of thanks was accorded to Professor M'Lauchlan Young for his paper.

The Annual Dinner.

The members of the Society afterwards dined together, Professor W. O. Williams in the chair. After the usual loyal and patriotic toasts, Mr. JOHN HUTTON, R.C.V.S., proposed "The Royal College of Veterinary Surgeons," which was responded to by Principal WILLIAMS.

Mr. D. YOUNG, Editor of the *North British Agriculturist*, proposed "The Scottish Metropolitan Veterinary Medical Society." In doing so he said he was shackled by a fear that he might trespass upon professional etiquette. For the life of him he could not understand ths question of professional etiquette, specially in regard to the seclusion of women from the profession. That very week the veterinary profession were to be feasting and toasting Professor Sir John in recognition of the honour of knighthood which had been conferred upon him. There was no one, however, who had done more to block the way of veterinary science than Professor Brown had done. The profession frowned on anyone who acted as veterinnry editor or answered veterinary queries in a lay paper, If that be a breach of professional etiquette, then Professor Sir John Brown had broken the rule, for he had acted as Veterinary Editor of the *Field* for many years The report of the Commission on Tuberculosis would have been out, but for the trouble caused by Professor Brown, who had stood out against any favour being shown for the tuberculin test, until last year he went across to Denmark and saw what was being done there under Professor Bang.

The CHAIRMAN, in replying, said that the Society had always endeavoured to do its very best for the promotion of veterinary science.

Other toasts followed, and a pleasant evening was spent.

BORDER COUNTIES VETERINARY MEDICAL ASSOCIATION.

PROFESSION "PAST AND PRESENT."

BY MR. JOS. CARLISLE, M.R.C.V.S., CARLISLE.

Gentlemen,—One day, some five weeks back, while attending to my sheep and lambs on the farm, I was very much surprised when my old assistant of forty years ago, Mr. Henry Thomson, came and informed me that I had been once more elected president of the Border Counties Veterinary Medical Society, and asked what day would suit me best to hold the usual meeting. This astonished me not a little, as I was under the impression that our friend Mr. Garnett had been re-elected president for his generosity in entertaining the members of the Society so regally at the "Old England Hotel," Bowness-on-Windermere, last summer, and I told our Secretary, Mr. Thompson, that I really could not undertake the duty; but you all know him—he would not be denied, so here I am to make the best of it; but I really must say your kindness towards me at the last meeting quite overran your discretion.

Now, gentlemen, I cannot disguise the fact that, considering my age, having been born a few months after the G. O. M., Mr. W. E. Gladstone (and I am sure we are all sorry to hear that at present he is suffering such great pain), it cannot be expected that I am going so strong and well as I did sixty years ago; it stands to reason that the organs of the body, as well as their functions,

get worse as age creeps on, and you must therefore bear with me, as neither eye nor ear are as bright as once they were :—

> But what a change has taken place in four score years and ten,
> Altho' we were not quite so fast, we were much surer then.
> These new ideas, as they are termed, quite knock me in amaze;
> But then we lived in times gone by—in fact, the good old days.

Gentlemen, great changes have taken place, I may say, in everything as well as our profession, since I graduated in London and became M.R.C.V.S., on the 24th April, 1837, and if our meeting could have been held on Sunday next we could have celebrated the sixty-first anniversary of my entering the profession.

I frequently think, when looking back on old times, that if all the rules, regulations, and educational schemes that now seem necessary for the progress of the profession had been in force at the time I entered the college, the majority of men would have had some difficulty in gaining admittance to the classes. Yes, times have certainly changed. In the good old days, men who entered the profession were, generally speaking, from the ranks of farmers, blacksmiths, horse trainers, etc.—men accustomed to horses all their lives, and what they lacked in general education they made up for in their zeal and enthusiasm ; they were really true lovers of the noble animal, the horse, and I look back with pride and pleasure and think of these men, who, I may say, laid the foundation of the profession, vieing with each other, without the appliances that are now available. One and all took great interest in their work, for not only did they do their utmost to relieve the sufferings of their patients, but they also acted as nurses, sitting in the stable or box, watching for hours the symptoms and progress of the case, and doing their best to effect a cure; and they were delighted beyond measure when success rewarded their trouble and anxiety.

The basis of treatment was quite different then to what it is now—bleeding, physicing, and blistering were the sheet anchors—and taking into consideration the large number of different maladies we had the privilege of treating, which is not now the case (there was no scheduling then), we were fairly successful.

Referring to some of the specific diseases now under schedule, say glanders and farcy in the horse, we all know how loathsome and dangerous these are to both man and beast, and from all accounts seem to be on the increase in towns, but I don't think they are so common now as they were in the early part of my professional life. In the old coaching days they were very rife and nearly all country blacksmiths kept their farcy lead-irons. Horses in chronic glanders I have known to work for years with apparently no bad effect to other horses, yet from its dangerous nature I would strongly urge that when clinical symptoms are pronounced, the animals—until we find some more scientific method—should be destroyed independent of the Mallein test, and the parties compensated from the public purse.

Tuberculosis, an old associate of the past, and still rampant at the present, but from my experience and observation, it was, I think, more prevalent twenty years ago than it is now ; it has, in fact, since ever I can remember, been one of the greatest scourges of the bovine species, perhaps, indeed, the greatest of any. Hundreds of animals affected with the disease have to my knowledge been slaughtered and consumed as human food, and so far as I know without any ill effects. I have always looked upon it as being hereditary, and why it should follow in the wake of certain families in the human subject and bovine animals and not be hereditary appears strange to me.

There is something yet beyond the ken of bacteriologists that wants further investigation, for if it is not the disease itself that is transmitted from parent

to offspring, there is a strong tendency in certain subjects to favour its development and which is not seen in others. But now that it is considered by microscopical and bacteriological experts to be so dangerous and communicable from man to beast and *vice versâ*, and looked upon as being spread by cohabitation, inhalation, and ingestion, it is a great wonder to me that it has not been scheduled long ago as one of the most dangerous of the specific diseases. It seems quite evident that some of the experts amongst the powers that be, have some great reason why, or they are afraid to speak out. Something stronger than such palliative measures as more cubic air space for each animal will, I think, be required, before it is eradicated from our midst. That more air space is needed for each cow cannot be denied; carrying in my mind's eye the numerous byres I have seen in Cumberland I would venture to say that they would not average 250 cubic feet to each animal, and if 800 cubic feet has to be the order of the day nearly all the byres in the county will have to be reconstructed, a very serions matter for the landowners. But with good drainage and ventilation, I would say, from 400 to 500 cubic feet of air to each animal would answer better, as all feeders of cattle for either beef or milk know that they get best and quickest returns when their animals are kept warm, about 60 degrees, and have a nice sweating moisture on the body. Before I leave this part of my address I may mention that I have had many interesting discussions with Dr. Brown, the Medical Officer of Health for Carlisle, on the subject of tuberculosis and as to how and under what conditions the disease is communicable to human beings. I know he has for a long time back given the matter his closest attention and it gives me great pleasure to avail myself of the present opportunity of saying how highly I estimate his professional abilities. He and I are perfectly agreed as to the necessity of something being done by Government to stop, as far as lies within human power, the awful ravages committed by this insidious disease, although we may perhaps disagree on some trifling points as to the conditions under which it may be communicated to the human being. It is my firm belief that cleanliness and healthy surroundings as well as regards the cattle as the persons attending upon them, accompanied by a careful and systematic veterinary inspection, are the principal objects which should be kept in view when trying to lessen the dangers and infectious character of the disease.

Abortion, Casting, or Slipping the Calf, is another malady of the past as well as the present, and it is hard to say whether abortion or tuberculosis causes the greatest loss to the farming community; my opinion is that abortion is on the increase, and far more prevalent now than what it was in the early part of my life; but is there any wonder, when we take into consideration the enormous traffic that is carried on in cattle to-day?

There is little doubt that abortion in its epidemic form is highly infectious, very destructive, and causes great loss and anxiety to the breeder. When an animal shows signs of casting its calf, there are no means of arresting the process. Consequently, the only remedy lies in prevention, and this, in my opinion, can only be successfully accomplished by strong legislative measures, and the best way to cope with the malady is by scheduling the cattle and restricting the movements of aborted animals. Therefore, the sooner tuberculosis and abortion in cattle are legislated upon the better. We have plenty of both diseases in the British Isles, also well-trained experts to deal with them, and if Government would only cast off its lethargy and exercise its powers, and place matters in the hands of experienced trained experts, a better state of things would soon result.

Professional Etiquette, Advertising, etc.

I have often been amused when reading the letters that have appeared

now and again in the professional journals about this, that, and the other, not being in accordance with professional etiquette, but as I have already said, things have greatly changed. First, let me say that I am strongly against any member of the profession advertising any special remedy or operation; it sounds like quackery, yet I fail to see any harm in a young man fresh from the college putting an advertisement in the local papers stating where he can be found if his services are required; but, I ask, where can we draw the line, when we are almost daily receiving circulars from wholesale druggists, surgical and other instrument makers, wherein are found the names of Mr. ———, F.R.C.V.S., and Mr. ———, M.R.C.V.S, and all men of well-known repute; perhaps this is not advertising?

Writing Books, Pamphlets, etc.

It is to the pen and press we mortals owe
Almost all we learn and almost all we know.

I have noticed that the publishing of books, etc., is found fault with by some members of the profession; this to me seems rather weak for it is a well known fact that when books are printed, they are as you know for sale to any one, professional men and others who care to buy and read them.

The answering of questions in lay newspapers appears to some a great breach of etiquette, but from what I have read, I think they are more of a boon than otherwise, particularly when the replies are by a professional man; they, in my opinion, prevent the Querist from poisoning and wasting his animals with quack medicines, and I note that the writers generally wind up by recommending the local veterinary to be called in to the case.

Lectures.

The more a man knows the less he thinks he knows, and the more he wants to know. It is a well-known fact that Agricultural Students have attended the Veterinary Lectures at Veterinary and other Colleges for years past and I can safely say that those men who have received a good liberal education and have been trained in scientific subjects with a knowledge of Veterinary Science are by far the best supporters and employers of professional men. They do not tinker with the case; their little knowledge is a dangerous thing—yes, they know too well it is dangerous to meddle with the case and they send at once for their professional adviser. It is the uneducated man with his cure-all bottle that is most to be feared. Lectures may therefore be considered a necessity and a means of preventing an over extended use of quack nostrums. We cannot take up a newspaper of any kind without noticing glaring advertisements of all sorts of Patent articles for man and beast, while nearly all farmsteadings have their patent medicine box, and if the Veterinary Surgeon wants to hold his own, I say it is his duty by every means in his power to caution owners of stock and show what harm can be done by the use of these articles, and to point out that prevention and not cure is the great aim of the profession.

Shoeing Forges, Dealing in Horses.

I will venture to say that we cannot boast of a millionaire in the ranks of our profession; it is not all that lucrative; members in large towns where big studs of horses are kept may be successful in making fair returns, without forges, but those who have a well-regulated shoeing establishment, I think, will do better. I consider the shoeing of horses one of the principal branches of the profession, and that it will long continue to be such. I, myself, commenced at the anvil, and would do so again if I had my career to go over.

Dealing in Horses.—Since I can remember this has been more or less in connection with the profession; like all other things it may have its abuses, but when properly carried out, I cannot see any harm in a man supplementing his income and employing his leisure hours in buying and selling a good horse. I have bred, bought, and sold some hundreds of horses in my time, and have found out that it is not "all gold that glitters."

Country practices, as a rule, are not over lucrative; it is well-known that at certain periods of the year there is a large amount of spare time, which the practitioner is justified in employing to the best advantage; it not only keeps him in contact with business men, but extends his work, sharpens his faculties, and makes him a better citizen. It is also a fact that whatever profession or business a man may be trained to, in time he becomes connected with other industries, and by their means supplements his income; each man has a perfect right to do the best he can for himself and family, without, if possible, injury to his neighbour.

As I have said more than once, great changes have taken place; in the past our great object was to cure disease, and now in the present our endeavour is to prevent it, and we, as professional and scientific men, should strive to see this is accomplished without the aid of the pole-axe. If by the use of attenuated extracts prepared from diseased portions of affected animals, we can, by injecting the same into the bodies of healthy subjects, arrest the progress of maladies that are not amenable to ordinary medicinal treatment, I say then the profession will be well worthy of its name.

The scheduling of so many of the specific diseases, and the slaughtering the diseased and in-contact animals, this will in time have a telling effect on our income, and if preventive measures are to be the order of the day and enforced, veterinary surgeons will be asking themselves if they should not be compensated for their services out of the public purse.

In conclusion, although for a long time I was the only qualified M.R.C.V.S. in the county of Cumberland, and now, I may say, there are about 30, I cannot boast of accumulated wealth, yet I am proud to say that I am rich in love of my profession, and would like nothing better than to start again on the basis of all the new discoveries, and put in another sixty years.

THE CENTRAL VETERINARY MEDICAL SOCIETY.

(*Continued from page* 251.)

Mr. W. HUNTING: Mr. President and gentlemen, I desire first of all to compliment Mr. Taylor upon the mass of material he has condensed into so short a paper. I am exceedingly pleased he has brought this matter before us, for perhaps no men in this country have had greater experience in this connection than Mr. Taylor and his colleaugue, Mr. Porch. I have a letter from Mr. Porch, which I will read to you. He writes to me:—

I much regret that I shall be in Scotland on Thursday night, and cannot attend the Central Society's meeting.

I should have liked to have given my experience with mallein. I have injected nearly 3,000 horses, and, with the exception of two cases, in which an abscess appeared at the point of injection, I have seen no trace of ill-effects.

I set more store by the local than the general indication, but have had two cases in which the swelling did not appear for 30 hours after injecting; both, on *post-mortem*, were infected. In two cases, I have had a regular double reaction, but failed to find any sign of glanders in the lung.

On the other hand, 99 per cent of the mallein cases have proved correct, and it has enabled us to clear our stud. In 1897, I had two cases of glanders during the first six months, and no cases during the last six. I think its use should be made compulsory in all infected stables.—Yours faithfully, R. PORCH.

My own experience (continued Mr. Hunting) is also in agrement with Mr. Taylor and Mr. Porch, namely, that mallein is as nearly infallible as anything in this world can be. There are, I allow, every now and then indefinite cases which come under our notice, cases in which you have, perhaps, a local reaction without a general reaction, or a general reaction without a local reaction. In those cases we are certainly better off than we were before, and if one used his brains and mallein, I think there would be very few mistakes made. If, however, in the practical use of mallein for the suppression of glanders, a man unfortunately condemned to death wrongly one horse out of a hundred, he would be well within the mark of doing his duty, and would err on the right side. At any rate, he would have behaved more accurately than has been possible in the stamping out of any other contagious disease in this country. It was not merely 1 per cent. of animals that were mistakenly sacrificed in the suppression of cattle plague or of swine fever; and I am not quite sure that the 1 per cent. covers the errors made in the attempts to get rid of rabies. I am quite sure of this, that with the aid of mallein, the exactness with which you work is twenty times that which you apply to any other disease. Professor McFadyean said that he did not think the painfulness of the swelling was so diagnostic as Mr. Taylor opined. Personally, I have been of the same opinion as Mr. Taylor for two or three years. If I get a temperature rise and a swelling of only two inches, and it is painful, I kill the animal. As to the curative value of mallein, I understood, I must say, from my reading of a translation of M. Nocard's work, that he did claim a cure; in fact he commences his paper, I think, with the remark that he met with great opposition for having dared to say—those are nearly his words—for having dared to say this disease of glanders was curable. One fact he mentions pointed in that direction. He mentions that a large number of horses which reacted to mallein, failed to react to repeated injections, that on a *post-mortem* examination lesions were disclosed in the lungs, which lesions failed, on inoculation in guinea-pigs, to produce any effect. He (Mr. Hunting) thought they might say those were cures. Professor McFadyean said something to the effect that we were probably wrong a few years ago in thinking that glanders was a very rapidly fatal disease. I am not prepared to allow that anybody did think so. It has a short period of incubation very often, disease is apparent for a week or two, and, in former days, it was the custom to patch up this animal and send it to work again. Then the disease would break out again, there might be a similar patching up, and the horse would be put to work once more. Many of us recognised in a great number of cases that glanders was far from being an immediately fatal disease. Reverting to the beginning of the century, to the days of White and Coleman, you will read in their works that glandered horses worked two or three years with clinically developed symptoms. Therefore, I do not think it is necessary to suppose that we are under any delusion about the rapid development or fatality of glanders. I certainly think my experience warrants me in believing that mallein stops the development of the disease. I am inclined to think that very few horses "break up" as it is called, that is, develop clinical symptoms, after being injected once or twice with mallein.

Professor McFADYEAN: What cured them before the use of mallein?

Mr. HUNTING: Sulphate of iron, and beans, and copper.

Professor McFADYEAN: And nature had nothing to do with it?

Mr. HUNTING: Of course, nature has to do with the cure of all diseases. In continuing, Mr. Hunting referred to what he considered were Professor McFadyean's views about compensation, when

Professor McFADYEAN (interposing) said: I have never opposed the giving of compensation in all circumstances. I have opposed the awarding of com-

pensation in the case of a horse about to die, or clinically glandered, but I am in favour of compensation when the law deprives a man of a horse that is suspected.

Mr. HUNTING: The Professor's explanation is that he referred only to clinically-developed cases, or those about to die. Well, clinically-developed cases are largely in excess of those about to die. Clinically-developed means that a horse may have one farcy bud. Anyone who has had experience—which the professor has not had—of a large stud, keeping it under his constant observation, knows that a horse after it has developed farcy, may work for years, and frequently has done so after the development of all the classical symptoms of glanders. What I say is that Professor McFadyean opposed the granting of compensation beyond carcase value for a horse that might work for years, and might even spontaneously recover.

Professor MCFADYEAN: I again deny it.

Mr. HUNTING: Professor McFadyean also expresses the hope that the publicity to be given to Mr. Taylor's paper will convince the horse-owner of the necessity of using mallein. As far as I can see, most of the mallein used has been used by the horse-owners voluntarily. We have, perhaps, from the inspectors in London, 100 or 200 cases each; but we have men here who have used mallein in thousands of cases. While mallein has been voluntarily used by horseowners its use has been neglected by the authorities. Those authorities that Professor McFadyean has such a loving respect for are the very people who have checked the use of mallein when they have had the opportunity. Only the other day a deputation from the Glasgow Corporation, driven by the experience of their horseowners and by the use of mallein by their veterinary inspector, came to London to ask permission of the Board of Agriculture to get the order so altered as to enable them to enforce the use of mallein in the case of all in-contact horses. The reason they interviewed the president of the Board of Agriculture was, that though a great number of the horseowners in the city were quite willing to use mallein, the deputation considered it was unfair to these owners that a few others should be permitted to decline to have recourse to mallein themselves, or allow the local authorities to apply the test to their horses. It seems to me that the inference which Professor McFadyean ought to have drawn from the probable effects of the publication of Mr. Taylor's paper, was that its contents should convince the authorities of the value of mallein. The reply of the President of the Board of Agriculture to the representations of the deputation was altogether too funny. Mr. Long must have been driven into a dreadfully tight corner when he had to explain to the deputation that mallein was still in the experimental stage. He added that it would not remain in that stage very long because the Board of Agriculture were trying some experiments themselves, and they would definitely settle the question. The Board of Agriculture have one four-stall stable, and cannot very well segregate more than four animals in that stable. I have been reckoning that, with such facilities, it would take 750 years for the Board to conduct experiments equivalent to those already made by veterinary practitioners in London. Imagine a man in authority relying on such an excuse to a deputation which came to ask him to allow the Corporation of Glasgow to bring—in the words of Professor McFadyean—the law up to the standard of scientific knowledge.

Professor MCFADYEAN: I did not use any such expression. I think it was Mr. Taylor who did. But it exactly expresses my own view.

Mr. HUNTING (continuing): The horseowner quite recognises the value of mallein, but he is afraid to use it for two reasons. He is afraid to use it because if he does somebody may come and stick a label on the horse and close his stable, or make him keep these "suspicious" horses idle or kill them. So long as a man runs the risk of having a £40 horse knocked down

for £2 it is not at all likely that he will publicly use mallein. You must remember, also, that it is not a simple thing for an owner to permit the use of mallein throughout his stable. Any veterinary surgeon with experience knows the trouble involved in applying the test, if he takes a thorough interest in the work. From the owner's point of view, and on the score of interference with business, this job is regarded as extremely inconvenient. No man keeps more horses than he is obliged to do, and if 15 or 20 are laid aside out of a total stud of 200, much inconvenience results. And he is not likely to submit to the slaughter of valuable horses unless he is assured of having his loss made good in some reasonable measure by the public, or unless he is permitted to separate and work his horses without outside arbitrary interference. The great danger of the authorities—central and local—declining to use mallein to the fullest extent and in an honest manner is this: They not only prevent the discovery, and therefore the suppression of glanders in the various stables, but they encourage horse-owners to use mallein secretly, and, having used it, to sell the horses that are found to react. A man may be imbued with all good intentions, and, finding that he has 20 horses that react, decide not to sell them. Life, however, is uncertain and the horse owner dying his widow may be obliged to sell, or an owner may come to grief and the animals have to go to auction. I think you will agree with me that in mallein we have a diagnostic agent that might enable the country to clear itself in a very short time of glanders, to the ultimate pecuniary advantage of the horseowners and the nation at large. The first move must be made by the authorities, both central and local. A London vestry made some inquiries a short time ago of various large companies owning horses as to whether they used mallein, and the results. The following replies were received:—

London and North Western Railway Company.—Mallein only used in suspicious cases.

Great Northern Railway Company.—Mallein only used in suspicious cases, but test is not applied to the new horses as received.

Midland Railway Company.—Mallein test is not adopted, nor is it in contemplation to do so.

Great Eastern Railway Company.—Mallein test is not adopted, nor is it in contemplation to do so.

Great Western Railway Company.—All young and newly purchased horses are tested with mallein after their arrival in London.

London and South Western Railway Company.—Have applied test from time to time in cases of horses showing symptoms of glanders. Test not applied to new horses, it being considered that dealers would not allow company to apply it at dealer's risk before purchasing. All horses are purchased in the country, so that it is regarded that there is little risk of their suffering from glanders.

London, Brighton, and South Coast Railway Company.—Veterinary surgeon is of opinion it is extremely undesirable to apply test to healthy horses either at purchase or at any other period. He considers test useful in distinctly suspicious cases.

London, Chatham, and Dover Railway Company.—Veterinary surgeon is in favour of using the mallein test where necessary, and approves of its use as a test for glanders.

South Eastern Railway Company.—Newly purchased horses are not tested with mallein. Any suspicious case in stud is so tested.

London General Omnibus Company.—Do not test horses with mallein before purchase, but suspicious cases are tested with it.

London Road Car Company.—Have made extensive experiments with mallein, the result being satisfactory. Over 100 horses, on the evidence of

the mallein test, have been slaughtered, subsequent *post-mortem* confirming the fact that the horses were glandered. Test has been in force for three years for new horses. No horse is admitted to stud that fails to pass the test.

London Tramways Company.—Mallein test adopted some considerable time ago to all new horses. Company attach great importance to it.

South London Tramways Company.—Test not adopted, and company have no idea of doing so.

London Parcels Delivery Company.—Have not applied test before purchasing horses, and do not contemplate doing so.

Carter, Paterson and Co.—Have not adopted the mallein test to any extent, therefore unable to express any decided opinion thereon.

London County Council.—It is not considered necessary to apply the test to all horses submitted to the Council, but test would be applied to any animal which was suspected of being affected.

War Office—Army Remount Department.—Mallein test is used in all suspicious cases by the Army Veterinary Department.

Some of these answers are amusing in their ignorance, and some are, to put it mildly, inexact. I am informed that in many cases the veterinary attendant was not consulted but the reply framed and sent by some horse superintendent with the assistance of a clerk. If there are any veterinary surgeons present who agree with the worst of these answers we shall be glad to hear their explanations.

Mr. A. L. BUTTERS having complimented Mr. Taylor upon the excellence of his paper, said: I quite concur in the opinions and views which he has expressed. Mr. Taylor's experience is somewhat similar to my own. As Mr. Hunting has just said, the company with which I am connected (the Great Western Railway Company) decided, on my recommendation, to have all the young horses tested with mallein, because, as anyone can easily understand, after incurring considerable expense and taking much trouble in clearing a stud of glanders, the only way to keep it clear from any disease is by carefully testing all the young horses. And I am rather surprised to find how some young horses would come from places where, we are told, no glanders exists or has existed, act and react very strongly on the application of the mallein test. It has been forced upon me by the experience I have had with mallein, that the views which I entertained with regard to farcy and glanders were, to some extent, erroneous. The use of mallein has caused me to change my opinion very much with respect to these diseases. Of course I knew of cases of farcy which, in my own experience, had recovered and worked for years afterwards. I have no experience, however, of the length of time that clinically glandered horses will work, although we learn how, in the days of the old stage coaches, they used to run with horses visibly affected with glanders which, nevertheless, worked for years. I believe that is a well authenticated fact. All the same one is hardly prepared to adopt the view that an animal might be affected with glanders, and so affected probably for some years without showing some clinical symptoms of it. I think those who have used mallein come to that conclusion. It is, of course, only by having recourse to mallein that we can prove that. With regard to two horses that worked in pair together and were stabled together, I have known one to react to mallein and the other not. After they had worked together some time and were again tested, the same result has been found, the one horse has reacted while the other has not. Subsequent *post-mortem* examination has shown that the horse which reacted was glandered. The other horse was kept under observation, and never showed reaction or developed any symptoms of glanders. This, I think, goes a long way to prove that horses which have no clinical signs of glanders, and simply react

to mallein, are not so dangerous to other animals as one may be apt to suppose.

Mr. H. W. CATON: My experience of mallein has not been so extensive as that of Mr. Taylor, for the simple reason that I have not had command of a large stud, but I may say I have applied the mallein test in some hundreds of cases. With regard to the size and length of the swelling and its tenderness, I have known some swellings extend down the shoulder, and render a horse lame in the shoulder, which the animal could not put forward, and it has been thus lame for a week. I have seen a very slight swelling, of from $2\frac{1}{2}$ to 3 inches, just discernable, in a bad case of glanders. The temperature was then elevated. I have pinned my faith on mallein. Professor McFadyean has been good enough to supply me gratuitously with the mallein I have used. In three cases within my experience, there was no response until after thirty-six hours. Mr. Caton went on to say that this showed the necessity of care in sending horses out of London to graze or what not with other horses, lest they spread the disease. They should be kept isolated for a time until risk was obviated. As to acute cases not reacting, he had had experience of two or three animals which were clinically affected, and yet showed little or no swelling after the test, and had a temperature rather lowering than otherwise. His experience of London horse-owners was that, as a rule, they did not want their animals tested. They did not desire to know whether they were glandered or not, and preferred to live in a fool's paradise and allow the mischief to continue. The simple reason of this was that they should not obtain compensation. They were afraid of losing the horses which responded and so preferred to chance it. His anxiety to have horses tested was quickened by the fact that he had lost an uncle who had caught glanders, and the more disease there were among horses the more likelihood there was of the human subject becoming affected. In dealing with a glandered horse, in administering medicine, he always, for safety's sake, used a ball stick 22 inches long. As to the curative effects of mallein he had seen horses at work after they had responded. Glandered horses would continue at work, showing no clinical symptoms, for years, and perhaps ultimately die from strangulation of the intestine. His experience was that they did not break up. He had known a glandered horse work for five years. It was eventually killed because of a fistula in the withers. His conviction was that water-troughs were a prolific cause of the spread of glanders. He advocated a fair and reasonable allowance—£5 or £10—in respect of the slaughter of animals.

Vet.-Major NUNN said that for five years he was inspector of glanders and farcy in the Punjab, in a district nearly as big as France. During the Afghan War in 1879-80 the country under his charge was a hot-bed of glanders. His experience was that in a hot country when once an animal became clinically affected death took place very rapidly indeed. He believed that the same thing was observed in Algiers in the French army. Indeed he was informed of the fact by M. de Croix, the French army's veterinary surgeon. Not only did the Glanders and Farcy Act in India award no compensation to horse-owners in respect of the slaughter of their animals, but the owners were required to pay for the disinfection of their stables. He (Major Nunn) was inspector under this Act, and was empowered to enter forcibly, if necessary, any premises where there was good reason to suspect the existence of glanders, and he could call the police to his aid. Anyone resisting the inspector in the discharge of his duty, was liable to a fine of 500 rupees (£25) or six weeks' imprisonment.

Professor MACQUEEN: I must compliment the essayist upon the excellence of his effort this evening. It is the first occasion on which we have had a

paper from Mr. Taylor, and I must say both in the manner and substance of his address, and the way in which he has placed the subject before us, I consider his performance highly successful, and he deserves our very best thanks. With regard to the theme of the essay, "Mallein and its Uses," I think there can be no two opinions as to the usefulness of mallein, at least, in the diagnosis of cases of glanders not showing clinical symptoms. But I am afraid from the remarks which have been made to-night, we cannot regard mallein as an unmixed blessing. From what Mr. Hunting and other speakers said, there is the abuse as well as the use of mallein. It is used sometimes to obtain information for purposes which cannot be commended, and occasionally for purposes that may be very useful and admirable. But the danger with regard to mallein in present circumstances is that, without assistance from the Government and local authorities, which I quite agree with Mr. Hunting in seeking, this useful diagnostic agent is likely to be abused to the extent of permitting the increase rather than securing the diminution of glanders. I believe that glanders is more rife in London to-day than it was five years ago, but the knowledge of its existence is concealed to a great extent. When I used the word "concealed," I mean concealment from the authorities. Horse-owners may know very well of the existence of glanders in their studs, but, as there is no compulsory order without a declaration, I believe it is the custom in a great many places to simply conceal the fact. Now, I think that is to be regretted. I was rather surprised to hear Professor McFadyean say that instead of regarding mallein as capable of curing glanders, he was rather inclined to the opinion that glanders was not so fatal a disease as was formerly supposed A horseowner says: "I shall test my horses with mallein, I shall discover those that react, isolate them and work them away. The opinion of the principal of the Royal Veterinary College is that glanders is not so fatal a disease as was formerly supposed."

Professor McFADYEAN: That is quite incorrect. I desire to emphasise that.

Professor MACQUEEN: That is Professor McFadyean's opinion, and I quite agree with it. The glanders that we see nowadays is not the acute disease that we formerly saw. I am not so old a man as Mr. Hunting but I yield to no one in my earnest attention to glanders in towns, and my experience of glanders a good many years ago was this: acute glanders was then very rife and often fatal. When a horse was affected with acute glanders in those days he made a noise which he could scarcely conceal. His nozzle was ulcerated, he had swelling under his jaw, and a great many more symptoms which everyone has seen in cases they can remember; but we do not see these cases now. Cases of acute glanders are extremely rare, thanks to the action of mallein, thanks also probably to the attention given by veterinary surgeons. I do not agree with Mr. Hunting that acute glanders was not fatal in former times.

Mr. HUNTING: I never said anything of the sort.

Professor MACQUEEN: Your language then succeeded in concealing your thought.

Mr. HUNTING: You put the word "acute" in. That makes all the difference.

Professor MACQUEEN: Formerly glanders was not fatal.

Mr. HUNTING: Not so rapidly fatal.

Professor MACQUEEN: Professor McFadyean said that glanders was formerly a fatal disease.

Mr. HUNTING: The whole drift of the argument was that it was an immediately fatal disease.

Professor McFADYEAN: Certainly not. I must unintentionally have concealed my thought.

Professor MACQUEEN (continuing): In former days before mallein, glanders when acute was often fatal. The horse simply died from glanders. I admit that cases of farcy were patched up and worked for years, breaking out intermittently. But those cases of glanders which we knew because of the condition of the patient, were cases that often died; and even since I came to London I have seen cases, although a good many years since, cases that were fatal where the horse was actually dying apparently from the disease. Many years since I remember seeing a horse which showed very pronounced clinical symptoms. The question of the evening, as far as I can gather, turns upon the curability of glanders by mallein. Now, I believe that glanders is a disease which may exist in a horse for a very long time without showing any very definite symptoms, without being recognisable clinically, without showing much alteration of the horse's condition, and that the animal may continue in that way for a very long while, and may even pass muster as a healthy horse, and that the disease may subside. Whether that can be called spontaneously curable or not I do not know, but it meets the definition given by Professor McFadyean that the disease is not so rapidly fatal as was formerly supposed. Concerning experiments with mallein in connection with the curability of glanders, I remember that when Professor McFadyean read a paper before the society two or three years ago on the subject of glanders. The discussion which ensued included a number of remarks regarding what was called the "curability" of glanders with mallein. I remember, too, that one or two Italian veterinary surgeons carried on experiments for some time as to the supposed curability, and the sum and substance of their experiments was that, when a horse had been inoculated frequently at intervals of a month, two months, and so on, it failed to react and they called it "cured," but I am not aware of any long series of experiments on this point. M. Nocard's experiments are convincing in a sense, but I am afraid we can hardly accept unreservedly the statement of M. Nocard at the present time. We shall have to wait for a little further information. The reason why there will be a difficulty (so far as my view is concerned) regarding the curability of glanders by means of mallein, is that we require to know a little more about glanders itself. We require to know the period of latency in glanders, we want to know how long, in the natural process of infection, the horse may live without showing any symptom. That seems to me the important point, and if we could obtain the assistance of the authorities to have experiments carried out, it would be a great benefit, I think, to the public. I am sorry to say that, while I have every confidence in mallein as a diagnostic agent, I cannot shut my eyes to the way in which it is sometimes used—or rather abused—so that instead of reducing the number of infected animals, I have an idea which is probably explained by actual facts, that since the introduction of mallein the disease glanders has been spread over a larger area than over which it existed before.

Mr. HUNTING: That is a fact shown by the Board of Agriculture's returns

Reply and Resolution.

Mr. W. E. TAYLOR in replying said: Mr. President and Gentlemen, I do not think there is very much for me to answer, as nearly all the speakers have agreed with my paper. It is a cause of very great gratification to me to find that it so. Professor Macqueen says that glanders is not so acute as it was. With that I quite agree. When I first came to London ten years ago we used to have a tremendous lot of acute cases of glanders. Horses which to-day were, comparatively speaking well, would be found to have acute glanders to-morrow, and they would be dead in twenty-four hours. Now we never see such cases. Mr. Caton says he had seen horses lame from local swelling. So have I frequently. He also relates a case where there was no

local swelling until thirty-six hours after the test was applied. I think that happened to me one occasion, that is to say, I had a like experience. As to compensation, I quite agree with Mr. Caton that that is one of the great things we want, and to secure it is one of the objects of my paper. With regard to water-troughs, they all knew that these were a great source of spreading the disease. Mr. Prudames asks me if I have always taken the temperature before inoculation. If I have any reason to suspect disease I do. If they react we give them a bit more time, then take the temperature, and then mallein them again so as to make sure. Professor McFadyean said he did not quite believe with me that M. Nocard's paper declared that mallein cured glanders. That was the inference I drew from reading the paper. I certainly, with other speakers, am of opinion that M. Nocard wished it to be believed that mallein was a curative agent. Professor McFadyean desired to know what was meant by the reference to the Road Car Company's stables as being "practically free" from glanders. Well, Mr. Porch has answered that query in the letter which Mr. Hunting read. We have only had two cases of glanders in the year. That, I think, justifies the use of the words "practically free." Not wholly free because we may have a case to-morrow. Before sitting down I should like, with your permission, to move this resolution: "That this meeting is convinced that, the experience possessed by British veterinarians has thoroughly established the reliability of mallein fo diagnostic purposes in horses suspected of glanders. It is further of opinion that the use of mallein on all horses that have been in contact with glandered horses would greatly expedite and cheapen the work of suppressing the disease, if conducted by local authorities."

Professor PENBERTHY: I should like to be allowed the opportunity of seconding the motion. I must say that I was rather surprised to read the words reported to have been spoken by Mr. Long, President of the Board of Agriculture, to a deputation that waited upon him from the city of Glasgow. I have little doubt that such a motion as Mr. Taylor's passed by this society whose members collectively have more experience than anybody in the United Kingdom, will have very great weight and I believe it will prove effective.

The motion was adopted unanimously.

Professor MCFADYEAN moved and Mr. HUNTING seconded a vote of thanks to Mr. Taylor for his able and lucid paper, and this was unanimously agreed to.

Mr. TAYLOR: Thank you, very much.

On the motion of Colonel KETTLE, seconded by Mr. PRUDAMES, a vote of thanks was accorded to the chairman, and with this the meeting ended.

VICTORIA VETERINARY BENEVOLENT FUND.

THE following are the names of the gentlemen who constitute the Organizing Committee:—

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Legal News.

INTERESTING CASE UNDER "THE ANIMAL DISEASES ACT."

In the Dingwall Sheriff Court, on Tuesday, 22nd March, the first case under the above Act was tried before Sheriff Hill. It appeared from the address of the Public Prosecutor that for some time past complaints were reaching the County Authorities to the effect that the sheep flocks over the shire were in considerable danger from the disease known as sheep scab, which in defiance of the statute in question existed in several parts without being reported; and it was resolved that such steps would be taken as would serve to emphasise and put a stop to the offence, with this action as the consequence. On the complaint of the Procurator-Fiscal, John Maclennan, cattle dealer, North Kessock, was charged with having in his possession, and wintering on the farm of Tore Park, Parish of Killearnan, a flock of sheep affected with scab. Mr. Ross, Solicitor, Inverness, appeared for accused, who, when his client was asked whether he was guilty or not guilty, objected to the relevancy of the libel on the ground that the guilt or innocence of the accused turned on the construction of the 52nd section of the said Act, and not on the 4th, as specified in the charge, and a pretty long discussion ensued between the learned gentleman and the Public Prosecutor thereanent. The Sheriff, however, decided that, seeing the charge was drawn up in terms of the Act, though the inclusion of the section referred to might be an improvement, the action could not be invalidated. The Public Prosecutor was, however, permitted to amend the libel so far as to base his case on the 52nd as well as the 4th section. The accused, on being now asked to plead, alleged ignorance as to whether the disease existed in his flock, which was held to mean not guilty.

The first witness examined was Roderick Fraser, farmer, Tore Park, who deponed that a flock of the accused's sheep had been wintering on his farm during the months of November and January last. He could see that a number of them were in a misthriven condition, was aware that it was reported over the district that sheep scab existed among them, while he himself entertained strong suspicions that the report was based on fact. Looking at some of them from a distance, they appeared to be labouring under the disease in question.

Duncan Cameron, shepherd, Conon, who, it appeared, was at one time in charge of sheep in the immediate neighbourhood, was aware that Maclennan's sheep were not clean. The symptoms could be detected a good way off. The black spots on the wool and it falling off were the indications. Was aware of the presence of the disease long before the visit of the V.S. took place. Saw Maclennan frequently bathing them, and he himself took for him from Kessock a particular sheep dip which was not used but for sheep scab. Had conversation with Maclennan on the subject, who was quite aware of the state of his flock.

Donald Grant, shepherd, Tore, deponed to having gone to serve with Maclennan in January last; was at the dipping of the sheep frequently. The last dip used was for scab, as indicated by the label on the tin; believed that some of the sheep had scab.

Donald Ross, police constable, North Kessock, deponed to having heard the rumour referred to, and went to Tore Park, and though not an expert, saw enough to satisfy him that the sheep which were pointed out to him as belonging to Maclennan were not what they should be. Saw Maclennan on the 27th January, who inquired why he had been looking at his sheep, to which he replied that it was because he had heard that they were affected

with scab, and that it was his duty to know and report, on which Maclennan rejoined that there were other flocks in the country as bad as his. Saw plainly that many of them were affected by some disease.

Mr. George Gair, V.S., Conan, deponed to having on the 1st and 2nd February gone and made an inspection of the flock in question at the request of the County Clerk. It numbered in all 173. He went over every one; 17 had had the disease and were cured, but 7 animals were still affected therewith. Cross-examined by Mr. Ross—Sheep scab and sheep itch were one and the same disease. It was caused by a parasite which burrowed under the skin.

Maclennan was himself examined on oath, but his evidence was to establish the previous testimonies.

The Public Prosecutor submitted that he had proved his case, but did not wish to press heavily on the accused by demanding the full penalty of £5 for each animal affected, but he hoped that the Sheriff would inflict such a penalty as would meet the expenses of the case.

After a few words from Mr. Ross, the Sheriff imposed a penalty of 10s. for each sheep, or £3 10s. in all, or one month's imprisonment.—*Invergordon Times.*

INTERESTING AUCTIONEERING DISPUTE.

SHERIFF RUTHERFURD has disposed of an appeal against the decision of his substitute in the action raised in the Sheriff Court at Edinburgh by George Pendreigh against John Croall & Sons (Limited.) The summons concluded for repayment of the price of a horse purchased at a sale by auction on 10th November, 1897, in the defenders' premises. The sheriff-substitute decided in favour of the defenders, and the sheriff has now dismissed an appeal against that judgment, with expenses. In a note the sheriff says:—The horse, as described in the sale catalogue, was, "96, property of Bertram Younger, Esq., Nenthorn, Berwickshire, 'Watchman,' chestnut gelding, 16.0, 7 years, up to 14 stone; a most remarkable and clever hunter, very safe and high jumper, has carried Mrs. Younger for the last two seasons, also quiet in single and double harness, believed to be sound. Subject to V.S. inspection prior to sale." The horse was put up at £20, and, after some competition, was knocked down to the pursuer at the price of £32, which was paid to the defenders, and the pursuer got delivery. On 12th November the pursuer wrote a letter to Bertram Younger, Esq., Nenthorn, in which he said:—"Dear Sir,—I bought a chestnut gelding of yours, 'Watchman' by name, at Messrs. Croall's sale on the 10th. Will you kindly inform me which side you put him when running double?" No answer to this letter was received by the pursuer, to whom it was returned through the Dead Letter Office, and a correspondence thereafter ensued between the parties, in the course of which the pursuer proposed to return the horse to the defenders, but as they declined to accept it, it was placed at livery, and eventually sold by judicial warrant. In these circumstances, and as it appeared that there was no such person as Bertram Younger, Nenthorn, Berwickshire, the pursuer maintained that the sale was carried through under essential error and misrepresentation, and that there was no valid contract. Of course the defenders, as auctioneers, were known to be acting as agents, and shortly after the sale, by letter of 22nd November, they informed the pursuer that the horse had been consigned to them by Mr. John Turnbull, postmaster, Selkirk. The pursuer therefore was entitled to proceed either against the defenders, who acted as agents for an undisclosed principal at the date of the sale, or against the owner after he was disclosed. He had elected to sue the defenders, and the question was whether he had set forth a relevant

case against them. The pursuer did not specify what material statements regarding the horse were untrue, other than that of its being the property of Bertram Younger, Nenthorn, Berwickshire, and neither in the letter nor in his correspondence with the defenders, did the pursuer state any objection to the horse on the ground that it did not answer the description of it in the catalogue as being up to 14 stone, a clever hunter, a high and safe jumper, fit to carry a lady, and quiet in harness. The only objection was that the pursuer was under essential error as to the owner of the horse, and no doubt that might be sufficient to annul or dissolve the contract if identity as to the person were essential. But it did not follow that because the pursuer was under an erroneous belief as to the ownership of the horse, he would be entitled to set aside the contract. The Sheriff did not think that the pursuer's error as to the ownership of the horse affected the substance of the contract, or caused him any prejudice. So long as the horse in other respects answered the description in the catalogue, it was difficult to see how it could be of any consequence to the pursuer to whom it belonged. The Sheriff was, therefore, of opinion that the pursuer's averments were not such as would entitle him to an issue of essential error as in a question with the defenders, who were not alleged to have acted fraudulently in the matter. In any event, however, the Sheriff concurred with the Sheriff-Substitute in holding that the pursuer was precluded from insisting in the present action by the 5th and 6th articles of the conditions of sale, which were prefixed to the catalogue, and by which it was conceded that the pursuer was bound.

Counsel for the pursuer—Mr. Sym. Agents—J. and W. Saunders, S.S.C. Counsel for the defenders — Mr. T. B. Morison. Agent — P. Morison, S.S.C.—*Scotsman.*

Sequel.

In Edinburgh Sheriff Summary Court on Thursday, April 14th, before Sheriff Dove Wilson, John Turnbull, jobbing master, Selkirk, was charged with having, on the 8th November last, at the Royal Horse Bazaar, Castle Terrace, Edinburgh, occupied by John Croall and Sons, Ld., pretended that three horses which he was sending for sale by auction were the property of Bertram Younger, Nenthorn, Berwickshire, that the first two horses had been ridden for the last two seasons by Mr. and Mrs. Younger respectively, and that the third had been used as a shooting pony all the season; with having induced the said John Croall to insert the horses in their sale catalogue in terms of the description so given, and to offer them for sale as the property of Bertram Younger, a gentleman who was stated to have a hunting establishment in Berwickshire, for the purpose of inducing competition and obtaining higher prices for the horses; and with having thus induced three gentlemen to purchase the horses at £33 12s., £27 16s. 6d., and £12 12s. respectively, which money he received and appropriated to his own use. In connection with this case an action was raised some time ago, at the instance of the buyer of the first horse, to recover from Messrs. Croall the price of the horse in respect that the information in the sale catalogue was misleading, but Sheriff Maconochie held that there was no ground for action against Messrs. Croall, who were merely agents in the sale, and dismissed the action. An appeal to the Sheriff-Principal was also dismissed. Turnbull was represented by Mr. T. B. Morison, advocate, instructed by Mr. Peter Morison, S.S.C.

Mr. Morison objected to the relevancy of the complaint on the grounnd that it set forth no crime, and that the statements in it were irrelevant for want of specifications. They did not say that the horses were worthless animals, or that the buyers paid more for them than they would have done if the representations had been true. He submitted that the only condition

upon which a charge of imposition could be maintained against any person is if they have been induced either to part with goods or money by a representation in such a way as they would not have done if the representation had been false.

His Lordship upheld the irrelevancy of the complaint in so far as he thought that it would be necessary to aver that the purchasers were induced to do what, but for the descriptions so given, they would not have done. He would, however, give the prosecutor an opportunity to amend the charge, and the words "which but for the description in said catalogue he would not have done," were added.

Mr. Morison thereupon asked for an adjournment, as the question of the value of the horses would have a bearing on the charge, and he was not prepared at that time to lead evidence on that matter.

The accused, having tendered a plea of not guilty, the case was adjourned until Monday, 25th April.—*Edinburgh Evening Despatch.*

OBSTETRICAL SURGERY.

Read before the Eastern Counties Veterinary Medical Society, March 8th.

BY J. POLLOCK, F.R.C.V.S., NORWICH.

MR. PRESIDENT AND GENTLEMEN,—I need not say that the subject I have selected for consideration to-day is one of great importance to us as veterinary surgeons, and one which I fear has not received all the attention it deserves.

When our president asked me to give a paper, he named this subject as one likely to be of interest to practitioners in the Eastern Counties. I trust this may prove to be the case.

At the outset I might ask myself the question, what are the essentials of a good obstetrical surgeon? and, in reply, I would say the principal requirements are manipulative dexterity, sound judgment, and a good muscle. I am afraid that in some cases sound judgment gives place to determination and temper, as I have known of cases where the operator has fastened the mare's head to a pillar, and the fœtus by pulley-blocks to a post, and by brute force dragged the foal away, with the result that the uterus was ruptured, rectum torn, and bladder injured—this triumph of skill soon found its completion in the patient's death. Doubtless you will agree with me when I say that such treatment is neither scientific nor humane. Has the time not come when we should look for something better than the meagre satisfaction springing from the fact that we have delivered the mare or cow, as the case may be, after several hours hard exertion, only to find her sinking when the operation is over. I trust that something may be said in my paper to provoke discussion, which will tend to benefit ourselves and others, so that by our united efforts it may be our privilege to impart to the veterinary world fresh thoughts, fresh ideas, fresh conclusions as to what may be accomplished by surgical skill, trained muscles, and new instruments for the relief and mitigation of pain to suffering animals. With this object in view, I place before you the result of my experience on the subject.

In the brief period at my disposal it will be impossible for me to deal with all the mal-presentations, maternal and fœtal, which are met with in practice. I must leave it to another speaker to deal with the maternal difficulties arising from scirrhous os, tumours, abnormalities of the pelvis, and many monstrosities, as we shall find enough matter to engage our attention for the time being in the consideration of various forms of fœtal dystokia which I shall put before you.

For some time we, as a profession, have not advanced many new views as to the best methods of operating, nor have we introduced many instruments to help us out of our difficulties. I shall venture to-day to submit for your inspection and opinion a collection of new instruments, which I trust may be of some benefit to the profession, knowing at the same time it is one thing to make instruments and another thing to use them. It will also be my privilege to bring before you new methods of operating. Without further preface may I introduce the instruments which will be spoken of later in my paper; I shall explain their mechanism, and I trust that their utility will be apparent.

It might not be out of place to show you first of all the obstetrical instruments which I have used for some years with varying amount of success. They consist of one principal steel rod with handle at one end and a screw at the other. To this screw I fasten, as required, sharp or blunt hooks, straight porte cord, curved porte cord, subcutaneous spatula, jointed hook, spring hook, or bone saw, etc. You will observe that I have also a number of short hooks, blunt and sharp, and a variety of embryotomy knives, some of which you may consider more ornamental than useful. These instruments doubtless you all possess in a more or less modified form.

I now wish more particularly to direct your attention to a variety of instruments which I have invented. I am sorry that I have not been able to place them before you in a complete form, as the time at my disposal has been limited since I promised to give the paper, yet I trust they are sufficiently developed to give you an idea as to the purpose I have in view of their manufacture. I am much indebted to Mr. Huish, Fisher Street, London, for having executed my orders with such despatch that I have been able to put them before you to-day.

No. I. may in future be known as the Porte Spring Band. Hitherto we have been in the habit of passing cords round the limb in the following manner: coiling the end of traction cord into one hand and passing it round the part we intend to encircle. In doing this we often experience great difficulty. By the aid of these spring bands we can pass a rope round any part much more easily; they are so flexible that they may be drawn into a straight line. When attempting to pass the spring (1) attach your traction cord to one end of band by a spring hook; (2) pull the string into a straight line and pass the arm into the vagina passage: (3) put the inner end of the spring against the part we intend to encircle, and by gentle forward movement the spring will recoil and encompass the limb, neck, or body of fœtus, as the case may be. The spring can then be withdrawn by the end that was first passed in, and by the act of withdrawing the band we draw round the traction cord. Without the aid of this spring band we would experience great difficulty in using No. II. instrument.

No. II., powerful Ecraseur, with cross handle to be held while the screwing process is going on. This ecraseur can be used in two ways. The chain can be drawn in by both ends at once, or by one end only, the other being attached to a fixed point. The latter movement brings the saw or serrated edge of chain into full play; with this ecraseur it is possible to remove a limb at any part. To place the chain in position it will be necessary (1) to use the spring band; (2) draw in a cord attached to band; (3) attach the end of the cord to chain. Having placed the chain round limb, neck, or body of fœtus, fasten the chain ends to ecraseur. The handle can then be turned and the part will be severed.

No. III., Double Barrelled Ecraseur. This instrument can be made lighter than the other on account of its mechanism. It has a triple action. (1) Both ends of chain may be drawn in by the screw of the long barrel. (2) One end of the chain may be attached to screw of short barrel, making it a fixed point, while the other end is attached to and drawn in by the screw of

long barrel. When moving the handle of this ecraseur, the shot-barrel screw can be connected or disconnected at will to the handle movement. If disconnected, and the handle is turned to tighten the chain, you produce action (No. 2) by drawing the chain in by one end only. When we have made the chain so tight that to put extra pressure on would simply mean snapping it, we bring action (No. 3) into play by connecting short barrel by means of a small clutch and pinion wheel. We then find that by turning the handle the chain is drawn in by the screw of one barrel, while it is let out with the same rapidity by the other. By this arrangement we can produce perfect saw action round the parts. It is my intention to make this ecraseur a compound instrument by fixing on the end of the long barrel a serrated embryotom and a guillotine; these additions will be found useful in cases of amputation, etc. I may add that the embryotom and the guillotine will also be manufactured as independent instruments.

No. IV. is a compound instrument fitted with Ear Forceps, Nose Forceps, and two sizes of sharp hooks. The ends of the forceps are opened and closed by means of a cone attached to a screw at one end, and to a rod with a universal joint at the other. This instrument can be opened or closed at any angle on account of its mobile joint.

No. V., Obstetrical Harpoon. This will be found of service when we have a case in which we can only touch, but cannot handle, any part of the fœtus. The fœtus is pierced in the most convenient spot of thorax or abdomen; as soon as the head of the harpoon passes into the thoracic or abdominal cavity of the fœtus, the arms of harpoon, by virtue of spring arrangement, fly open. We can then draw the fœtus to the pelvis. In further manipulation the handle or rod of this harpoon may obstruct our movements, so I have arranged that this handle can be unscrewed and removed; by this unscrewing it becomes disconnected, leaving the harpoon head inside the fœtus whilst the handle is withdrawn. But I wish to call your attention to this point specially, that although I have withdrawn the handle, I still hold the fœtus fast by a cord which passed through the centre of the tubular handle and was fastened to the head of the harpoon.

No. VI. is the Guillotine, which consists of a tubular handle and a steel rod passing down its interior. This rod is moved out and in by means of a screw. The cutting knives stand at right angles at the end of the rod. One knife is attached to the inner rod, and the other to the outer tube. The knives pass each other like a pair of scissor blades, and are sufficiently strong to stand the strain of forcibly cutting through a bone or joint.

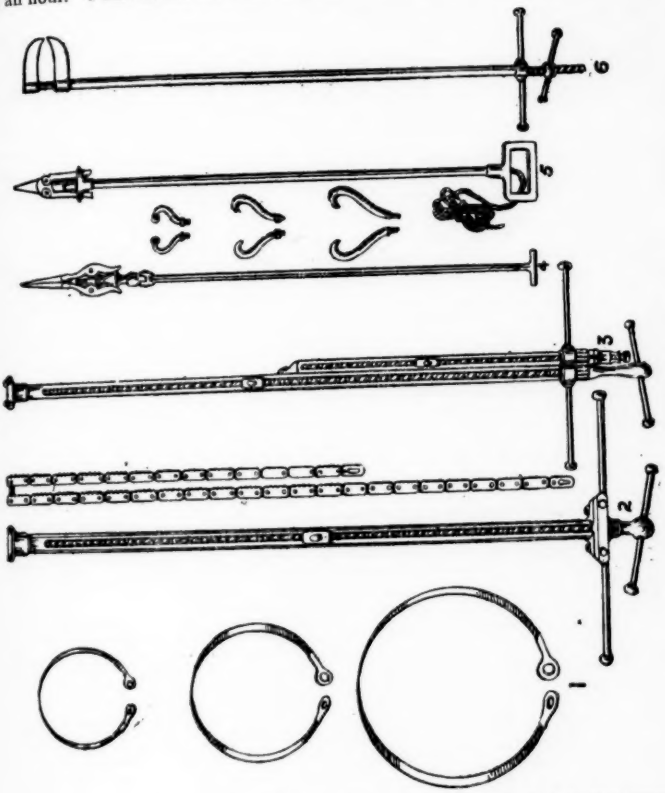
I might name several additional instruments which I purpose at some future time to place before you, but as they are still *in embryo*, it would be well not to give them a premature birth, so I shall content myself with the few that I have had the pleasure of showing and explaining to you.

I trust I have now made clear the mechanism of each instrument; it remains to explain more fully their uses. In order to do so I have prepared a few diagrams which will illustrate more clearly than words the position of the fœtus in the uterus. We shall hurriedly look at a few of the more simple presentations and gradually lead up to those which tax our best powers.

The drawings before you represent the presentations to which I shall refer.

Before speaking of the mal-presentations represented in drawings, a word regarding natural labour may be acceptable. Normal labour is frequently accomplished without aid, and the results are often satisfactory. But there are exceptions to this rule, and not unfrequently unfavourable results follow want of attention to animals at the parturition period. Owners of animals would, therefore, be wise to exercise precaution and ensure careful watching during this critical time. When we remember the rapidity which characterises the birth of the foal owing to labour being violent, and other

physiological causes, we can readily see that serious accidents and even fatal results frequently follow on unattended and unassisted cases. One or two illustrations will suffice to show the necessity of watchfulness. Last foaling season I was called to see a valuable mare which had given birth to a large foal during the night. On inquiry I learned that she had foaled when no one was near her. She presented serious symptoms of internal injury and died in an hour. *Post-mortem* revealed a large rupture in the bowel, produced by



protracted labour and over-straining. Another case, somewhat similar, came to my notice. The mare was neglected, labour came on, one limb of foal was displaced, she strained so violently that rectum was ruptured and bowel protruded to the extent that it trailed on the ground. All this resulted from slight displacement of limb and want of attention.

Looking at the drawings before you No. 1 is perhaps the easiest presentation we have to deal with in practice, as one limb only is retained. I have

never known a foal to be born in this position. It might be possible if foal or calf be small and the pelvic capacity large. The only rational procedure would be to get limb up. This can generally be accomplished by simply cording the limb, and having recourse to retropulsion whilst the limb is drawn upward and outward. In placing cord on the leg that is retained, advantage might be taken of any benefit arising from the use of the spring band.

No. 2, as a rule, is much more difficult to deal with. If the head is not protruding from the vulva, no time should be lost in getting up limbs in manner indicated in last figure. Should the head be protruding. as a rule it will be found necessary to decapitate. The operator must remember to leave the skin that has been dissected from the skull so as to cover the bones. When head is removed, retropulsion should be practised and limbs secured and drawn up ; here again the spring bands will be of service.

Nos. 3, 4, 5, 6, show us a variety of positions in which we find the head and neck. In No. 3, if the foal is alive, greater care will be necessary so as not to injure it. I therefore suggest the use of the ear forceps with universal joint. You will be able to securely fasten on the ear, and by exerting retropulsion on the limbs and traction on the ear, the crown of head will be raised above brim of pelvis. Cord may now be put on under jaw and traction applied to it ; head will be brought into position in vagina passage, when delivery can be effected.

No. 4 shows us lateral deviation. This presentation, as a rule, gives great difficulty owing to length of foal's neck, the head can scarcely be touched. If possible get hold of head ; the ear forceps will be of advantage in this case, or the sharp hooks may be fastened with same instrument and applied to ridge of neck, when traction can be carried out and the head brought within touch. But I wish you to imagine it an impossible task to bring head into position. I would then suggest that cervical section be resorted to. Pass one of the spring bands round the neck, and proceed to adjust the ecraseur chain, tighten, and by saw chain cut neck through, lay hold of cut end of neck and drag neck and head out, when we will find all difficulty removed.

No. 5 shows us the head thrown completely back and unreachable. It may be found necessary to remove one fore limb, then by use of the ear forceps or hooks in the same instrument, the neck and head may be brought into position. As to the best method of removing the fore limb, I would suggest that the small pulley blocks be used ; cord the pastern and draw the limb straight and rigid by the blocks, cut deeply the muscles attaching limb to trunk, then cut the skin in a straight line down the inner side or front of leg, dissect skin from pastern, by thus holding limb tight and getting assistance to pull the dissected skin also tight, it will be easy to pass the subcutaneous spatula, and soon the whole skin will be detached from limb. A little pulley traction can now be exerted, and complete evulsion of limb will result. The neck can now be more easily got at, either for the purpose of pulling head into position, or to practise cervical section by ecraseur, as in No. 4.

In No. 6, as a rule, delivery can only be effected by performing embryotomy. Remove one lung in manner previously indicated, pass spring band, draw chain round neck close to withers. Sever the neck as in manner already explained, draw out head and neck, and then delivery will be easy.

No. 7 presents all the extremities in the passage. If possible the hind limbs should be returned well into the uterus, but care is necessary or the womb may be seriously injured by the hind feet when traction is applied to the front limbs. It might be possible to remove front limbs, and then apply version and take foal away as a breach. I have known such cases being

successfully dealt with in the following manner: traction was applied to front limbs, whilst the hind were repelled. The body of foal was cut in two as far back as possible, the lumbar portion of trunk was then pushed forward into uterus, hind legs drawn out, and delivery effected. In all cases where transverse section is adopted, I would advise the use of the ecraseur.

Nos. 8 and 9 are perhaps our most difficult cases, especially if encountered in a large mare. Let us imagine, for brevity's sake, that there is no possible chance of getting limbs into position, then embryotomy must be performed. To do this without fresh instruments is next to an impossible task, but I

venture to predict success if the ecraseur is used. I have tested it and found it capable of removing a hind limb completely and with comparative ease. Granted you have decided to remove hind limb at hip joint, pass spring band under the pubis of foal, bring it up over the front of stifle, place the chain in position, attach it to ecraseur, put the gate of ecraseur as near the pubis of foal as possible, the chain to be placed up over the head of femur, the chain will then force the femur out of the acetabulum. When this is accomplished the operator will have to decide whether he can now draw the foal away or whether it will be necessary to perform a similar operation on the other limb. I believe it will also be possible to remove a hind limb with the embryotom by placing one cutter in anus of foal, cutting through the pubis, then directing it through the hip muscles, etc., but I cannot speak with such certainty, *re* this instrument, as I can about the ecraseur, which I have proved by experiment to be safe and certain.

As in No. 8 so in number 9 amputation is frequently necessary ; choose the limb and proceed as already described. In all such cases where embryotomy is to be performed, do it early, don't first exhaust the mare and yourselves, and then fly to such instruments as I suggest. I feel sanguine that there is relief for the obstetrical surgeon in the use of these instruments or in others that yet may be invented as the outcome of our deliberations to-day.

No. 10 may appear to some present an easy task, but I can assure you, simple as it may appear, a similar case found my friend, Mr. Overed, and myself a stiff task for several hours last season. I hope, now that we have such instruments as the guillotine, embryotom or ecraseur to use, we shall experience little difficulty with such a case as this.

No. 11 and 12 are presentations I have repeatedly met with, and of all the difficulties in obstetric practice I have had to encounter, these have taken the palm. It was impossible to apply version, rotation, or retropulsion ; all one could do was to call in assistance and with knife, chisel, and saw perform transverse section as best one could. I could report three of such cases which occurred in my practice in one week, mares' value in the aggregate £600. In each case delivery was completed only to be followed by the death of the patient: little reward for such herculean labour. For all such cases in future I would recommend passing without delay the spring band, to get line and then chain saw, round the body of foal. I know of no other means to get chain round foal when in this position, than by the aid of the spring band. Having got chain in position it would be well to determine whether you should make one or two transverse sections. If possible make two; bring away first of all the dorsal section, lay hold of one of the other parts, and bring away in the best manner possible. Cutting in two by ecraseur does not leave the bones so ragged as by the old method, so there is not the same danger, although due care must be exercised. I am very hopeful that the difficulties indicated in drawings 8, 9, 10, 11, and 12 will in future be surmountable.

No. 13 is that condition in which the foal or calf can only be touched, but not handled. In the past this has been unmanageable so far as my experience has gone. Happily, I have not had many cases, but so long as such exist, we must try to meet them. The only method suggested to my mind is that of piercing with harpoon, drawing fœtus forward, and delivering in manner indicated by the presentation, whatever that might be.

In the past I have tried, as doubtless many of you have also done, every conceivable method to get at such distant lying foals or calves, and have failed. I hope this instrument will commend itself as likely to prove helpful.

No. 14 is the last difficulty that I purpose bringing before you, viz., twisted uterus. It has not been my lot to meet with many cases of the kind. My

memory takes me back to one I had three years ago in a powerful mare. I tried rotation of the mare's body, in the manner taught so clearly by Dr. Fleming in his valuable work on obstetrics. After fully testing this method, I gave it up in disgust, and shot the mare. This method might have been successful in a case of partial torsion, but when I made *post-mortem*, I discovered complete twist of the uterus. I also discovered that the foal's head and one fore leg had passed through the uterus into abdominal cavity. This lesson is so fixed on my mind that I would be loth to try rotation again for complete torsion.

Since reading the paper so ably written some time ago by Professor Macqueen on Abdominal Surgery, I have formed the opinion that the only rational method of treatment in complete torsion is laparotomy. I believe success would follow if performed with such surgical care as that indicated by the Professor. I feel inclined to try that method in my next case.

It goes without saying that preservation of the mother is the principal object we should seek to attain, so in all dystokia cases we should first of all make careful examination. Be certain of the presentation to be dealt with, come to a positive decision as to the best way out of the difficulty, and with skill, caution, and perseverance carry out our designs.

In bringing my remarks to a close, let me add that to be successful obstetrical surgeons we must carry out and enforce strict hygienic rules. The most skilful operation may fail if we neglect this important point. Such cases as septicæmia, septic laminitis, and many cases of metritis, would, in my opinion, be warded off, were we to practise thorough antiseptic irrigation. I strongly believe in cleansing the uterus out repeatedly if necessary.

You have now before you some of my thoughts on this subject, and I trust that matter for discussion has been offered. It only remains for me to thank you for giving me this opportunity of expressing my views as to how dystokia cases may be grappled with in the near future.

If the outcome of this meeting result in the duties of my professional brethren being made easier, with a larger percentage of success, and less suffering for the patients, I shall feel rewarded for the time spent in bringing this subject before you.

TUBERCULOSIS AND THE MILK SUPPLY.

Conference at Keswick.

On Thursday afternoon, April 21st, a conference of medical men, veterinary surgeons, and representatives of sanitary authorities in Cumberland and Westmoreland was held, on the invitation of Canon Rawnsley, Keswick, to hear an address on "Tuberculosis and the Milk Supply," by Professor Délépine, Professor of Pathology, Owen's College, Manchester. Among those present were:—Dr. Barnes, Dr. Brown, Dr. M'Donald, Mr. J. J. Bell, V.S., Mr. C. Courtenay Hodgson, Mr. Wheatley, Mr. J. H. Gibson, and Mr. J. W. Wright, Carlisle; Mr. F. P. Johnston, Castlesteads; Mr. James Cropper, Kendal; Dr. Robertson and Mr. J. Soulsby, V.S., Cockermouth; Dr. J. B. Fisher, Whitehaven; Principal Smith Hill, Aspatria Agricultural College; Mr. H. Thompson, V.S., Aspatria; Dr. Palm and Mr. J. Donald, V.S., Wigton; Mr. W. T. Lawrance, Farm School, Penrith; Mr. R. Tinniswood and Mr. R. H. Cowan, Dalston; Mr. J. J. Sealby, Thornthwaite; Dr. Douglas, Colonel J. J. Spedding, Dr. Burnett, Mr. W. H. Briggs, Mr. D. N. Pape, Mr. J. Hall, and Mr. Wilson, Keswick; and Mr. J. C. Toppin, Penrith.

Canon RAWNSLEY, who presided, stated that he had expressions of great regret at their inability to be present from a number of gentlemen. Proceeding, the Chairman said: It is an honour to introduce to you Professor Délépine, of Owen's College, Manchester. It is not the first time he has visited Cumberland, for, when the Medical Congress met at Carlisle, he was chosen to be president of the pathological section. His European reputation as a bacteriologist would have justified me in asking you to meet him were it not that he has spent the last ten years of his life in patient original research in connection with the tubercle bacillus and our milk supply, and stands to-day among the first of our land as an authority upon this gravely important matter. If it is true that 6 per cent. of the mixed milks that enter our large towns are probably infected with this deadly germ, that 10 per cent. of the cows in our country dairies are tuberculous, and 30 per cent. in our town dairies are stricken with this disease, it is surely high time, seeing that the disease in many forms is communicable by the animal to the man, that public opinion was roused to the national danger. It is a fact that, owing to agricultural depression in prices of corn, we each year are becoming more and more a nation of milk farmers. It is a fact that, owing to circumstances and change in the fashions and customs of motherhood, we are each year becoming more and more a nation whose young children are fed rather upon cow milk than upon their natural human food. This being so, it is essential that our milk supply be safeguarded, and the conference to-day will, I hope, strengthen public opinion in the desired direction. I have much pleasure in asking Professor Délépine to address us.

Professor DELEPINE, who was warmly received, said a fight against tuberculosis means a serious financial problem, and in the present state of things it would involve losses affecting chiefly our agricultural interests. This would not be right; it is not reasonable that, in order to protect the public generally, one or two classes of the community should be made to suffer. At the present day there is perhaps in this country not a herd of cattle, a cowshed of any size, which is free from tuberculosis, and there must be very few milk shops from which tuberculous milk is not issued from time to time. Some enlightened cattle owners have, it is true, tried to eradicate tuberculosis from their estates, but, though in the long run they will reap the benefit of their right action, the initial cost has been such that others have not been encouraged to follow their example. Much may be done by private enterprise; but, as a matter of simple justice, it seems to me that the first cost of a general fight against tuberculosis must be borne not only by the raiser of stock, the dairy farmer, the cattle dealer, or the dairyman, but also by the consumer, for whose protection these measures have to be taken. It might be difficult to apply the necessary regulations to the whole kingdom, but it should be possible, by stringent measures applied locally, to get rid of all tuberculous cattle, and clear all infected places in, say, a county or a combination of counties. This being done, it would then be possible to make any person introducing tuberculous cattle in such a district responsible for such an action. Having myself studied tuberculosis for many years, I am more and more convinced that tuberculosis must be considered a serious public danger. In order, however, that you should be able to form an opinion for yourselves, I now bring before you evidence from which you will draw your own conclusions as to the nature and extent of the danger. The lecturer then proceeded to demonstrate by a number of remarkable lantern slides the ravages wrought by the various forms of tuberculosis, as pulmonary consumption, tubercular meningitis, tabes mesenterica, scrofula, lupus, bone and joint tuberculosis. Regarding the frightful disfigurements caused by lupus, he said these effects, which are so evident when they are manifested on some superficial part of the body, are also found in internal organs. Thus, in a tuberculous lung or kidney you may

find cavities due to ulcerations similar to those shown disfiguring the faces of patients affected with lupus. There is not a part of the body which entirely escapes this dreadful disease, and whatever organ it attacks it gradually transforms into a mass of useless inflammatory products, which in their turn die and crumble away. The nature of the process is well known in early stages of tuberculosis in the intestines and liver. All these lesions are the work of the tubercle bacillus. Slides were shown illustrating a cell containing bacillus from the lungs, a growth of bacilli on glycerinated media, a pure culture under the microscope, and the remarkable resistance of the tubercle bacillus. There were also illustrations of tuberculosis produced in guinea-pigs by inoculation of pure cultures, and pictures were exhibited showing the effects on intestines of guinea-pigs inoculated twelve days and thirty days previously with tuberculous matter. The Professor here showed pictures of three guinea-pigs which had been inoculated with a very small quantity of Manchester milk, and which showed typical tuberculous lesions of various degrees. We have not, he proceeded, even the consolation to think that a disease which produces such frightful ravages is rare, for if we consult statistics it becomes evident that tuberculosis must be considered a very frequent disease. Even at the present day, when, by improvements in sanitation, the disease is less frequent in the lungs than it used to be, it is found still that one-tenth of all deaths are due to pulmonary phthisis alone Thanks to numerous researches which have been made during the last thirty-five years, we know exactly how this disease is produced. Before that knowledge had been acquired, it was impossible to deal with tuberculosis in an efficient way; there was then an almost general belief in the heredity of tuberculosis, a belief which has not quite died out yet, though it should have been dead long ago. The contagious nature of tuberculosis was overlooked by most people, and barely believed in by a few. Now, on the contrary, we have absolute proof that the disease is produced by nothing else than the bacillus. Its development may be favoured or not by the age, the state of health of the victim, and by external circumstances, but it remains the cause of the disease. The tubercle bacillus may penetrate the body in various ways, but the two most important channels of entrance are the air and the food passages. Through the first the air carries to the lung dust loaded with the tubercle bacilli. In the alimentary canal, foods, such as tuberculous meat, and more frequently tuberculous milk, are the carriers of the germs. Owing to the great frequency of pulmonary tuberculosis in the adult and the great mortality due to it, some observers have minimised the importance of infection through the alimentary canal; but in the case of infants it is impossible to doubt the importance of this channel of infection Judging from statistics in our hands, it is evident that tuberculosis of abdominal organs is far from infrequent in children. Infants begin to be seriously affected with tabes mesenterica (a kind of consumption of the bowels) when they have reached the age of six months, *i.e.*, when most of them have begun to be fed on other foods than their natural food, and more especially on cow's milk. In half of the children dying from any cause during the second year of their life, tuberculous lesions can be found. In a large proportion of these cases there is good evidence to show that the bacilli have entered through the alimentary canal, and must have been introduced with cow's milk. We are bound to admit the importance of infection through the alimentary canal, and this danger will evidently be proportionate to the amount of tuberculosis in cattle. By putting together figures collected in England, France, Germany, Denmark, and Holland, and based on the examination of some 600,000 head of cattle, I find that, on an average, more than 16 per cent. of all cattle must be tuberculous. Some important German returns give 15 per cent., Danish statistics give 17·6 per cent. Recently, in

Manchester, Mr. King, the chief veterinary inspector, found, on inspection of cattle throughout the Manchester abattoir, that 41 per cent. of the cows were affected with tuberculosis. Taking all the cattle examined, it was found that about 28 per cent. were tuberculous. It is well to remember that certain cowsheds have been found so completely infected that 80, 90, and even 100 per cent. of the cows kept in them have been found to be tuberculous. It is, however, fortunate that the milk of tuberculous cows does not usually become infectious unless the udder be diseased. And it is still more fortunate that the udder becomes affected only in a small proportion of tuberculous cows. Yet it must be remembered that it is impossible to tell when the udder of the tuberculous cow is likely to become affected. In Manchester it would appear that six out of thirty-six very tuberculous cows examined by Mr. King had tuberculosis of the udder. I have examined specially the milk of twenty-nine tuberculous cows in which the disease was advanced, and found that in six of the cases the milk was capable of producing tuberculosis. I may say, however, that in five out of these six cases the udder was certainly diseased, and in the sixth disease was probably present. So that unmixed milk, taken from tuberculous cows kept in Manchester byres, proved to be capable of producing tuberculosis in 25 per cent. of the cases examined, *i.e.*, in one out of every four. Evidence of this kind shows that we have to deal with a real danger. It is, however, seldom that the unmixed milk of a tuberculous cow reaches the consumer, except in the case of children and invalids; and it might be argued that, after being diluted with good milk, tuberculous milk ceases to be a source of danger. This point has been tested both in Liverpool and in Manchester, and, as I have assisted the medical officers of health in this work, I am able to tell you what I found. The milk was collected at the railway station immediately on its reaching town. No less than 6 or 7 per cent. of these samples of milk were capable of producing tuberculosis, without speaking of the diseases produced also. This infectious milk may be less dangerous to adults, but I have no doubt that a very large number of children are killed by it every year, and that adults would be the better for not using it. The danger being admitted, what shall I say in regard to the remedy? I can only suggest the direction in which measures would prove efficient. A question of this kind is more of the department of an administrator than of a scientific investigator. The first general measure which can be recommended for the purpose of combating tuberculous infection from milk is in the hands of the consumers. It consists of boiling all milk used. There is a strong prejudice against this boiling of milk. For my own part, I think the defects of boiled milk have been exaggerated. I know families who, on my recommendation, have drunk nothing but boiled milk (except in their tea) for the last 12 or 13 years. I have watched children who have practically never drunk any unboiled cow's milk from the time they were weaned to the present day, in one case for 12 years and in other cases a little less, and these children have never suffered from the use of boiled milk. The great objection, however, to this easy remedy is that it does not protect us against tuberculous cream, butter, and cheese; nor does it mitigate the dangers of infection due to the presence in our midst of so many tuberculous animals. The second method of dealing with the milk so as to protect the consumer is to analyse samples from time to time, and to reject from our markets all milk that is not free from infectious properties. This method is not a practicable one. It is easy to detect common adulterations by simple chemical tests, but it is another thing to find whether a sample of milk can produce tuberculosis or not; this may take days, and meanwhile the consumer is not protected. We must turn to the actual source of the milk, the cow, and see that it is not

allowed to contaminate our milk supply. This means systematic inspection of our cowsheds and milch cows by competent men able to detect tuberculosis even before it has produced symptoms obvious to all. A careful veterinarian can now, by the application of the tuberculin test, combined with a thorough inspection, almost always determine whether a cow is tuberculous or not. As it is impossible to say when the udder of a tuberculous cow will become diseased, the milk of all tuberculous cows should be excluded from the market. After being sterilised by boiling or otherwise, this milk might still have a good commercial value. This method of inspection would free our markets from the greater part of the tuberculous milk which at present reaches them, yet this would do little towards stamping tuberculosis out. Tuberculous cows and tuberculous sheds would still remain a source of infection. It would therefore be necessary to separate the tuberculous cows from the healthy ones, to fatten all tuberculous cows for slaughter whenever the disease has not reached serious proportions, to disinfect thoroughly infected sheds, and to improve their construction, so as to allow of their being thoroughly cleaned, lighted, and ventilated. All cowsheds should be inspected at least twice a year, and the few tuberculous animals which would have escaped previous inspections, weeded out. The breeding of healthy cattle should be encouraged, and calves would be easily protected against a chance of infection if the preventive measures above mentioned were taken. The presence of tuberculous servants should not be tolerated either in the sheds or dairy. The milk pails and cans should be kept scrupulously clean. Of all the measures I have mentioned, two seem to me essential; first, the systematic and periodical inspection of cowsheds and byres, for the purpose of weeding out tuberculous animals; second, the testing of all cattle brought into the area of a given county, so that other sources of tuberculosis should not be introduced. If such methods were adopted, it would then be only right to see that foreign dairy produce is not allowed to flood our market unless good guarantees were obtained that proper measures had been taken to safeguard the consumer. Before concluding, I wish it to be distinctly understood that I am well aware of the great difficulties besetting the administrative side of this question. I have simply tried to indicate how the assurance may be obtained. I repeat again that I think it would be absurd and unjust to expect any special group of persons to bear all the expense of dealing with tuberculosis. It is a public question, affecting all interests. It is a great danger, and considerations of economy cannot indefinitely interfere with what may be considered an important public duty. Delay means more deaths and increased expenditure.

An interesting discussion followed, a report of which is held over owing to pressure on our space.

THE TUBERCULOSIS COMMISSION.

The report of the Royal Commission appointed to inquire into the administrative procedure for controlling danger to man through the use as food of the meat and milk of tuberculous animals, just issued, recommends, as mentioned in the "Political Notes" in *The Times* for April 20th, that powers shall be conferred on the authorities of all towns and municipal boroughs in England and Wales similar to those conferred on Scottish corporations and municipalities by the Burgh Police (Scotland) Act, 1892, viz.:—(*a*) The provision of public slaughter-houses; (*b*) the inspection of all meat slaughtered elsewhere than in a public slaughter-house and brought into the district for sale; and (*c*) the inspection of all animals immediately after slaughter in the public

slaughter-house; that in London the provision of public slaughter-houses should be considered in respect to the needs of London as a whole; that in Great Britain the inspection of meat in rural districts should be administered by the county councils, and in Ireland by corresponding authorities; that it should not be lawful to offer for sale the meat of any animal which has not been killed in a duly licensed slaughter-house; that in future no person should be permitted to act as a meat inspector before undergoing a qualifying examination on the law of meat inspection, the names and situations of the organs of the body, signs of health and disease in animals and carcases, and the conditions rendering fresh meat fit or unfit for human food; and that the Local Government Board should be empowered to issue instructions from time to time for the guidance of meat inspectors, prescribing the degree of tubercular disease which should cause a carcase to be seized. Pending the issue of such instructions, the Commissioners lay down certain principles which they are of opinion should be observed in the inspection of tuberculous carcases of cattle, and state that, in view of the greater tendency to generalisation of tuberculosis in the pig, they consider that the presence of tubercular deposit in any degree should involve seizure of the whole carcase and of the organs. In respect of foreign dead meat, it is recommended that seizure should ensue in every case where the pleura have been stripped.

In the second part of the report—that dealing with milk—the commissioners recommend, in addition to the compulsory notification of every disease in the udder of cows, and the power to authorities to take samples and make analyses of milk produced or sold in their district, that for the purpose of excluding from their district the milk of cows affected with tuberculosis of the udder, local authorities should be given powers somewhat similar to those of sections 24-27 of the Glasgow Police (Amendment) Act, with power to slaughter such cows subject to compensation; that at ports where milk and milk products are received from foreign countries any costs incurred in examination should be borne by the importers; that in future no cowshed, byre, or shippon should be permitted or registered in urban districts within 100ft. of any dwelling-house; and that the conditions of the attached cowsheds that shall warrant the registering of a dairy in a populous place in future should include the following:—(1) an impervious floor; (2) a sufficient water supply for flushing; (3) proper drainage; (4) a depôt for the manure at a sufficient distance from the byres; (5) a *minimum* cubic contents of from 600ft. to 800ft. for each adult beast; (6) a *minimum* floor space of 50ft. to each adult beast; and (7) sufficient light and ventilation.

For the elimination of bovine tuberculosis the report recommends, finally, that funds should be placed at the disposal of the Board of Agriculture in England and Scotland, and of the Veterinary Department of the Privy Council in Ireland, for the preparation of commercial tuberculin, and that stockowners should be encouraged to test their animals by the offer of a gratuitous supply of tuberculin on condition that the test be applied by a veterinary surgeon, that the owners undertake to isolate the reacting animals from healthy ones, and that the stock to be tested is kept under satisfactory sanitary conditions.—*Times*, 27th April.

REPORT ON RINDERPEST TO THE TRANSVAAL GOVERNMENT.

(*Continued from page* 305.)

Conclusion, Containing General Rules for the Application of the Method.

It appears from the whole of our observations that in order to grapple with rinderpest in an efficacious manner, one has to consider the condition of the animals that will provide the inoculative matter, and of the oxen to be treated.

For the purposes of procuring blood, those animals must be bled which have contracted the disease in its most severe form, and which have been salted one to five months previously, and have received at least one injection of rinderpest blood. Such animals are the best.

However, in case it is impossible to procure animals so treated, and the immediate inoculation of a herd threatened with rinderpest has to be proceeded with, blood may be obtained from oxen salted from one month and a-half to three months, which have received no rinderpest blood.

This blood must be used in its defibrined state.

The animals to be inoculated must be treated in two different ways, according to whether they are still healthy or already sick.

1. First injection with blood from a salted animal.

2. Let the inoculated animals mix with the sick oxen at the time of the first injection or on the following day, and let the animals under treatment remain for some days more in contact with the sick oxen.

3. The second injection of 100 c c. salted ox blood five days after the beginning of the contact. For instance, if the first injection is made on July 1st, and on the 2nd the oxen are brought in contact with the sick animals, then the second injection must be made on the 7th of July.

The sick animals must receive from two to three times more blood from a salted ox than healthy animals.

It will never be dangerous to inject even large quantities of curative blood. The quantity of blood from a salted ox to be injected into a sick animal, depends on the seriousness of the disease. The worse the animal is affected, the more must be used to effect the cure.

With regard to animals that have shown visible signs of rinderpest for one or two days, it is advisable to make an injection of 200 to 300 c.c. immediately this can be repeated one or two days later according to the seriousness of the disease.

When there is plenty of blood at one's disposal, one need not be afraid of making a few more injections. If, however, there is not very much blood, and some of the oxen are very ill and others only slightly affected, it is better to use the blood of those animals that are only slightly affected. In that case it is advisable to bring only a limited number of oxen under proper treatment, that is to say, to give a sufficiently large dose to each animal, rather than only half inoculate a large number; in fact, if a large number of sick animals are treated for cure by means of an insufficient quality one runs the risk of losing nearly the whole lot.

Animals previously inoculated with gall which subsequently become sick can also be treated by means of blood from salted oxen.

We confine ourselves here to noticing the principal rules; more exact instructions with regard to the practical application of the method appear at the end of this report.

It must here be observed that the whole visible symptoms of rinderpest do not appear earlier than eight days after infection. Thus those animals injected with preventative blood and brought into contact with sick animals must show visible signs of rinderpest seven or eight days after infection.

In case, however, a certain number of animals treated sicken two, three, or even five days after they have come into contact, it must be concluded that these animals were already affected at the time of injection, and allowance must duly be made when surveying the results.

General Rules for Combating Rinderpest.

In the beginning of the year 1896, rinderpest made its appearance in Matabeleland and Mashonaland, and in less than eighteen months it had

destroyed the cattle of these two countries, and had also overwhelmed the territory of the South African Republic and the Orange Free State. It is at present spreading from north to south, and from east to west, and seriously threatens the herds of the Cape Colony, Basutoland, Natal, and Zululand.

Owing to the protective measures adopted by the Governments of the South African Republic, Orange Free State, and the Cape Colony, the spread of the disease has been less rapid; but it is to be feared that the whole of the steps taken will not be strong enough to withstand its inroad, and that slowly, but surely, the epidemic will conquer the whole of South Africa.

Granting, what is very probable, that two or three years hence there will be some *foci* of rinderpest in the South and West, and those parts inhabited by natives, then it may spread afresh in other directions, and affect a new generation born after the epidemic, and therefore not salted. So, if general measures are not jointly taken to-day throughout the whole of South Africa, there will be great danger that we shall never see the end of this disease.

It is thus in the interests of all the countries of South Africa to take the steps necessary to prevent the possible return of rinderpest, and in order to do this it appears to us to be necessary to hold a congress in which all the countries interested should be represented.

We therefore propose to you to convene a congress at which shall be represented the Governments of the South African Republic, Orange Free State, Cape Colony, Zululand, Natal, and Portuguese Possessions, etc.

Instructions.

Procuring the blood.

Manipulation of the instruments.

(*a*) Take an enamelled pan with a capacity of from 6 to 10 litres (about 10 to 12 bottles).

(*b*) Fill this pan (three-fourths up) with clean cold water, and put in it:—

1. The trocar, with which the animal is to bled.
2. The knife or scissors for cutting the skin.
3. A brush, made of iron-wire, for defibrinating the blood.
4. The syringes and needles for the injection of the blood.

(*c*) Set the pan, with all the above-mentioned instruments in it, on the fire, and let the water boil for a quarter of an hour.

After the animal is laid down and tied fast, a rope must be put round the under part of the neck and pulled tight. The jugular vein, from which the blood must be taken, then becomes thick and clearly visible

Feel with the finger the place where the vein is to be found, wash with soapy water, cut right through the skin with the knife or scissors (that have been put in the boiling water) without, however, touching the vein itself, and insert the trocar from below to above in the direction of the head.

The incision must be made above the rope that has been tied around the neck.

Then let the blood run into the pan containing the water that has been boiled, after the instruments and water have been taken out and the pan itself has become cool, the blood being stirred the while with the iron brush.

After a sufficient quantity has been obtained (from a large full-grown ox four litres, that is six bottles, can be taken without doing any harm), the trocar must first be pulled out with a quick movement, and after that the rope around the neck may be slackened,

If the rope around the neck is loosened first, before the trocar has been pulled out, the danger is incurred of air getting into the vein, and the salted animal dying therefrom.

You must, therefore, never forget to first remove the trocar and then loosen the rope around the neck.

After bleeding, tar must be plastered on the wound.

The blood in the pan must be slowly stirred with the iron brush for fifteen to twenty minutes. When the particles of solid matter have been separated from the liquid the whole must be poured through a linen cloth or sieve; the blood thus prepared can then be injected.

None of these operations must take place in the sun.

All the instruments must be cleansed with cold water after use, and after that thoroughly dried.

The blood must be injected the same day that it has been obtained and prepared.

The same method must be adopted with regard to bleeding, stirring, and injecting the blood to be injected into salted beasts, as with regard to the blood from salted animals which is to be injected into oxen that are to be salted.

How to Prepare Salted Oxen for Use.

One month after salting, the salted oxen must be injected for the first time with 100 c.c. rinderpest blood, and, if possible, a second time after fifteen days from the first injection.

An ox treated in this manner can be bled for the first time fifteen days after the last injection of rinderpest blood, and this can be repeated for from eight to twelve times at intervals of from six to eight days.

Salted oxen from which blood is taken must be well fed and looked after; if they become thin, no more bleeding must take place.

Inoculation.

Healthy Beasts.

1. A first injection of 100 c.c. blood to each animal.
2. The inoculated animals to be brought in contact with the sick, or, if possible, infected by spreading on the nose the contents of the bowels of an animal that has just died of rinderpest. The contact must be kept several days.
3. A second injection of 100 c.c. five or six days after infection.

Sick Animals.

Animals already sick must be injected for the first time with 200 to 300 c.c. blood from salted animals, and two or three days later there must be a second injection from 100 to 200 c.c. blood should the animal not get better.

To be thoroughly salted, the animals must become sick and recover.

But it may happen that out of a herd brought under treatment, a certain number of animals become sick only after from twenty to thirty days after the injection, that is to say, at the moment that the animal loses from its body the blood which should protect it from the deadly disease.

In those cases a fresh quantity of 100 to 200 c.c. blood from salted animals must be used for injection of these animals in order to cure them and thoroughly salt them.

It remains to be observed that a certain number of animals treated may die during winter, from cold or insufficient food.

It is, therefore, advisable during the period of from six to ten days, while the sickness may last, to feed them on green forage.

Extracts from Foreign Journals.

GLANDERS.

In a recent work on experimental pathology and pathological anatomy, Professor Schütz, of Berlin, writing on the subject of glanders, formulates as follows the conclusions which he thinks himself warranted in deducing from his researches:—

I. Primary glanders of the lung does not develop as a result of the introduction of specific bacilli into the digestive apparatus.

II. The existence of primary pulmonary glanders has not yet been demonstrated.

III. The grey and transparent granulations of the lungs of the horse are not glanderous, but simply inflammatory lesions caused by a parasite which can set up similar lesions in the kidneys.

IV. The glanderous tubercle of the lung in the horse is a nodular hepatisation which undergoes a special process of separation (*chromatotexis*).

V. The old glanderous granulations enclose giant cellules.

VI. Glanderous granulations do not calcify; this is contrary to what happens in the case of parasitic granulations.

Let us make a rapid examination of the above-mentioned data on which the author takes his stand. In the first place, can pulmonary glanders appear primarily when glanderous bacilli are ingested into a horse? Professor Schütz says no. According to his own experiments, such a thing could not take place. He subjects those of M. Nocard in the same field to severe treatment, and disputes them on the ground that the manner of administration of the glanderous bacilli by our colleague at Paris allows of the supposition, at least, that infection may have first taken its rise in the mouth, the pharynx, and the œsophagus, from the germs that remained between the teeth or in the folds of the mucous membrane, the fact of giving the animals a drink after ingestion of the bacilli, even when concealed in carrot, not being sufficient to secure a complete antiseptic washing of the passages. That is, besides, what the ganglionary, pharyngeal, and even nasal lesions observed in the animals inoculated would lead one to suppose.

To shelter himself from this reproach, Professor Schütz caused to be given to his experimental subjects glanderous bacilli enclosed in gelatine capsules, which, after due external disinfection, were administered by the hand like balls, so as to avoid all inoculation into the upper part of the digestive tube, and so as to produce no infection but that from the stomach and intestine. Several horses were subjected to this test, each having received great quantities of products of glanderous cultures on potato or agar-gelatine. In almost every case from the second or third day after inoculation, a thermic rise was noted which continued up to the moment of slaughter. In almost all, too, examination of the dead bodies revealed the existence of granulations, ulcerated or non-ulcerated, in the intestinal mucous membrane, of lymphangitis of the mesentery, of the swelling more or less considerable of the abdominal ganglia with nodular softening foci. The liver and the spleen were sprinkled with whitish granulations varying from the size of a pea to that of a nut, with partly softened centre. All these lesions were found by bacteriological examination to be of a glanderous nature. In the pharynx, the nasal cavities, the larynx, the trachea, and the bronchi, nothing was found in such of the inoculated animals as had been protected from a bucco-pharyngeal infection. As for the lungs, they clearly showed glanderous lesions; in some of the inoculated animals there were at the same time observed some *transparent*

tubercles, but always in very small numbers. Supported by these results, Professor Schütz asserts that proof has been given of the possibility of contagion of glanders in the horse by the ingestion of liquid or solid food infected with germs of the disease, but he contests the statement that the pulmonary lesions in this case are primary lesions. In his opinion, they are always secondary, the inoculation taking place first on the surface which serves as an entrance to the glanderous bacilli.

This may perhaps be true in cases when considerable quantities of glanderous cultures are administered, but this condition is not realised in clinical surgery, the vehicle of the disease, liquid or solid, never containing more than a comparatively small number of infectious microbes. In that case, is it not possible that, just as in tuberculosis, the lesions may appear all at once in the organs which are more or less distant, such as the lungs, for example, and may spare the abdominal viscera which have been exposed in the first place to the infection?

Passing to the examination of the transparent tubercles, Professor Schütz absolutely refuses to recognise the glanderous character of those lesions which he has frequently met with outside the pale of glanders, and which he considers, in the cases of averred glanders, to be mere coincidences. They are always, he says, verminous parasitic nodosities, as his microscopic researches have shown. He even refuses to admit as belonging to glanders the nodosities of the kind that M. Nocard has described in his latest work on this disease. The control of an examination under the microscope must, he says, be wanting in their case, and the argument drawn from the inoculations or positive cultures obtained with these lesions, would not prove that they were glanderous products.

In his opinion, these transparent tubercles would only have behaved in this manner because they proceeded from horses affected with glanders, and not because they themselves were manifestations of the disease. Under these conditions, these accidental lesions might enclose glanderous bacilli, for he has himself observed the presence of these germs in the blood of the horse, in the course of acute glanders, and has been able to obtain cultures of it and positive inoculations in the guinea-pig. My opinion on this matter is known already, and I have had no reason to modify it since the publication of my work on *pseudo-tubercles*. There do exist in the horse tuberculiform lesions of the lungs, which, in spite of all appearances, belong neither to tuberculosis nor to glanders, and among these lesions I will mention, with Professor Schütz, the parasitic, transparent, or cretaceous nodosities. But, on the other hand, I have written—because I have verified the fact—that in pulmonary glanders in a state of evolution, nodosities may be met with in the different phases of their development; the youngest being small, gray, glossy, and semi-transparent, surrounded by an injection-zone; the oldest being purulent or caseous in their centre and often surrounded by a fibrous covering. I believe, then, with M. Nocard, that there exist transparent glanderous tubercles, and that the experiments made by our colleague at Alfort are sufficiently conclusive, despite the peremptory refutation mentioned above. In my opinion, the transparent tubercles of the lung of the horse may be glanderous or parasitic, their nature being judged of only by a collection of diagnostic elements.

Professor Schütz, who has made a very profound study of the granulations of glanders, and of those which do not belong to this disease, expatiates at great length in his work on the morphological characteristics, by means of which they can be distinguished; the principal are reproduced in his conclusions. Following the description he has given of them, he has diagrams representing his microscopic preparations, and these diagrams are very convincing. This part of the work is very interesting, and deserves our

attention. The following is Professor Schütz's conception of the glanderous tubercles; they are miliary foci of pneumonic hepatisation, ill-defined and gradually merging into the neighbouring portions of the lung. They are at first red, but in a short time their centre grows turbid, then grows pale, and shows forth clearly above the injection which persists in the periphery. On section, these tubercles show a surface which is finely granular, as in croupal pneumonia. Later on, this granular appearance disappears in the centre, which then presents a smooth, dry, yellowish-grey section, whilst the peripheric zone is transformed into granulation tissue, which gradually resolves itself into encystant membrane of a grey colour, surrounded by pulmonary tissue, which is normal, or sometimes still injected. Under the microscope there is first seen in the young red lesions an extraordinary repletion of the capillaries, and, in consequence, a diminution in the size of the cells, whose walls appear thickened. Soon the pulmonary vesicles are filled with liquid and with red globules, which soon separate and leave their colouring matter in the form of fine granulations spreading over the liquid. Then the leucocytes make their appearance, and the epithelial cellules, desquamated and more or less damaged; these diverse elements collect in a coagulated fibrinous mass, and end by quite filling the alveolar cavities. In this first stage, then, it is certainly a question of a miliary fibrinous pneumonia. Then comes the regressive period. At the centre of the nodosity, the alveolar compartments with their vessels and their contents die, whence the discolouration and the appearance of a grey mass, dim and smooth on section. At this stage occurs a most remarkable phenomenon; the chromatine of the nuclei of the dead cellules, instead of destroying itself, as in the other forms of necrosis, preserves itself even after the complete separation of the nuclei, and persists in the form of granulations, or of an agglomeration of little drops, which remind one in a measure of the nuclei which have disappeared. Later on these grains of chromatine, always recognisable by the colours with which they are strongly imbued, gradually collect together, while the protoplasm of the cellules disappears through resorption, to such a degree that at last they form an agglomeration, more or less compact, in the centre of the nodosity. This is the nuclear residue, which has been taken for pus or caseum, and which, when cut, shows so strongly the colouring matter. This central mass would never undergo calcification, even in the case of the most ancient and most encysted lesions. Mallein would perhaps act, says Professor Schütz, in the same way as an acid stopping the deposit of calcareous salts. According to him, the persistence of a chromatic mass without cretification would of itself be a certain criterion of the glanderous lesion. In the parasitic nodosities of the lungs, the chromatine does not persist in the dead portions, which, on the other hand, are little by little attacked by calcareous infiltration. This peculiar transformation of the cellules in glanderous lesions was first observed by Unna, and designated by him under the name of *chromatotexis*. Since his time several pathologists have made in regard to this subject concordant statements. Whilst the centre undergoes this mode of regression peculiar to glanders, the periphery of the tubercle organises itself into a fibrous capsule, whose conjunctive fascia are sprinkled with round cellules with a nucleus that takes on colouring matters strongly. On the periphery of the nodule may be observed a transition between the lacunæ of the fibrous shell and the pulmonary alveoli, still filled with an exudate rich in cellules or simply broken down.

Definite limits never exist between the nodosity and the surrounding tissue of the lung, even in old glanderous lesions, whilst the mortified central portion, which no longer presents the granular appearance of a miliary pneumonia, stands out very distinctly from the external

capsule. It is on the internal face of the latter that giant cells and *plasmazellen* (Unna) are formed, and when these cells themselves come to undergo regression, the colouring matter of their nuclei persists in the form of agglomerated granulations in the very heart of the protoplasm. These granulations vary in size, but they generally reach that of micrococci. Nothing similar can be observed in the giant cells of tuberculous lesions, nor in those of parasitic nodosities. In other words, in the giant cells of tuberculosis, the nuclei, though still quite visible, have already lost their chromatine, whilst, in those of glanders, the chromatine persists, even when the nuclei and the protoplasm of the cells are already destroyed. Ordinarily, the giant cells of glanders, by means of ramified prolongations, make their way into the central detritus of the nodosities, whilst their nuclei collect in that part of the cells which is turned towards the external capsule. But that, in my opinion, is common to all giant cells whatsoever, the nuclei often collecting in the direction of one pole of the cells.

As for the transparent tubercles, Professor Schütz gives the following microscopic characteristics of them :—They are always composed of a shell of fibre and a content formed of cells, which are lodged in a conjunctive reticulum, thinner at the centre than at the periphery. The capsule, which is on the outside surrounded by alveoli filled with air, is continued inside by the trabecules of the nodosity. The same vessels nourish all this framework of fibre, which is in fact nothing else than the alveolar tissue become sclerous and deprived of epithelium, but still quite recognisable, especially in certain points. When the nodosity is under the pleura, this latter takes part in the formation of the capsule. The cells occupying the cavities of the "web" are round; their spherical and granular nucleus takes on hematoxylene very strongly; but their protoplasm, which cannot be coloured by hematoxylic eosine, is not easily delimited, except in very thin sections. In this case it is observed that the protoplasm is not in great abundance, and possesses numerous prolongations anastomosed with those of the neighbouring cellules. To sum up, it is a question of a tissue of granulation at different periods of organisation, and that alone would suffice to distinguish these nodosities from those of glanders. But there is more: in the centre of this cellular and tubercular mass, which reminds one of a lymphatic follicle, the presence of a round worm is ascertained around which the cells are less heaped up and show, for the most part, a strong analogy with the eosinophile cells. These are round, sometimes fusiform, with a small nucleus which takes on strongly hematoxylene, and with a protoplasm rich in granulations, taking on eosine, so much so as to hide the nucleus coloured in blue. In certain nodosities these particular cells are rare; in others they form masses, especially in the neighbourhood of the parasite. Similar cells are never found in glanderous tubercles.

Often in these parasitic tubercles regressive phenomena take place: the parasite dies and undergoes cretification, at the same time preserving its form, which can be easily recognised through the microscope. Afterwards, the neighbouring cells die in their turn and their nuclei can no longer be coloured by hematoxylene, whilst their protoplasm takes on a diffused red tint from eosine. Cretification makes its way from the centre towards the capsule, which remains intact and very distinct, so that its central stony mass can easily be enucleated. The parasitic nodosities, when still young, are almost invisible by reason of their small size, which hardly exceeds that of a pin-head; they are grey and transparent. Later on, when cretification sets in, there appears in the centre a white point, which grows large in proportion as the mineral deposit is accentuated. Then the nodosities become very visible and palpable.

This description applies to several hundreds of transparent tubercles

examined by Schütz, and by his assistants, Olt and Künnemann. The pathology of these lesions is explained by the stoppage, in the form of embolism, of parasites in the capillaries of the lung, in which a local irritant action takes place analogous to that which H. Martin produced experimentally by intravascular injection of "inert" powders or emulsioned croton oil. When the worm, instead of stopping in a capillary, takes up its position in a larger vessel, it provokes thrombosis, followed by vascular inflammation, which also manifests itself under the form of a tuberculiform nodosity, but with morphological characteristics different from the nodosities which have just been under discussion. This second variety of parasitic nodosity—arteritis nodosa—admits a capsule represented by the sclerosed arterial wall, with preservation of elastic fibres, the neighbouring pulmonary tissue remaining intact. In this shell is also found a plug of varying size and appearance, constituted by the thrombus surrounding the parasite. When in course of time this lump is attacked by cretification, the dead parasite remains, nevertheless, visible in the majority of cases. When, on the contrary, fatty degeneration and softening replace calcareous infiltration, the lump splits up into albuminoid, fatty granulations, and into crystals of hematoïdine, around which appears a zone of round cells clinging to the internal coat of the vessel. In this case the parasite, which has undergone the same regression, ceases to be visible.

According to this description, it would seem to be a question of a species of parasitic, nodular endovascularity which may be met with in other places besides the lungs; in the kidneys, for example, if the parasite, crossing the pulmonary vessels, makes its way into the general arterial circulation.—(Contributed by Professor Gratia to the *Annales de Méd. Vét.*)

VERTIGO IN THE HORSE.

The term vertigo is often employed in current speech to designate in animals various phenomena which have often no connection with vertigo properly so called; we designate under this name "momentary troubles of the nervous system resulting from various causes, generally manifesting themselves in a sudden manner, and characterised clinically by an instability of the animal, causing or not causing the fall of the animal whether at rest or at work."

The gelding which forms the subject of this observation was about eight years old, and for three years had served with regularity as a carriage-horse. Being very quiet and performing without any respiratory trouble the journeys it had to go, it was regarded as a very useful animal. One morning it was handed over to me, with the following information: the patient was brought yesterday evening to the infirmary because of loss of appetite, general tremblings, and intense cutaneous chill. It was not known whether it had had colic. Its condition got better after vigorous bodily friction.

Examination.—Slight excoriations on the two orbitary apophyses. Conjunctivæ very slightly yellowish. Respiration normal. *Pulse soft, very slow* (18 *to* 20 *pulsations a minute*); absence of pathological sounds in the heart and lungs; no torpor.

On the afternoon of the same day, the patient was heard falling in the box in which it had been placed, which was somewhat dark. It got up at the end of a few minutes. A second fall took place in my presence three-quarters of an hour after the first. It was preceded by swayings of the body in the lateral and antero-posterior directions, quite similar to those which we notice in a drunken man when he stops short. The feet did not leave the floor, and the

fall, which caused the sternal position in front of me, took place so sharply that it was dangerous to remain near the animal. The breathlessness, which was pretty intense while the animal was lying down, gradually disappeared after it rose, which took place a few minutes after. Examination of the pulse, made half-an-hour afterwards, gave 35 pulsations. Treatment: iodide of potassium, 10 grammes a day. During the eight days following, falls no longer took place, or at least were not recorded; a sensible improvement seemed to have taken place in the animal's condition; the pulsations, counted twice or thrice successively, were regular, to the number of 38 to 40, and auscultation of the heart gave no particular information. The ninth day, new crises of vertigo made their appearance; during the lying down resulting from them dyspnœa was intense, and the breathlessness disappeared only gradually when the animal again stood up. The animal was handed over to the slaughterhouse.

This case of vertigo appearing during repose seemed interesting to me because the slackening of the pulse can give a rational explanation of its mode of production. It is, indeed, very probable that at the moment of the crises the number of pulsations was still less than 18, the minimum recorded. The insufficient number of cardiac contractions first caused an insufficient cerebral irrigation, which was the cause of the vertigo, and afterwards a defective pulmonary irrigation, which was the cause of the dyspnœa. To sum up, an excitement (of unknown origin) acting on the moderating cardiac fibres furnished by the spinal cord (internal root) to the pneumogastric, or on the central origin of the said fibres, was probably the starting-point of the phenomena I have related.—(M. MOUQUET in the *Recueil Vétérinaire.*)

Notes and News.

THE REPORTED OUTBREAK OF ANTHRAX AT OVER, CHESHIRE.—Correspondence has taken place between Mr. Cyrus D. Slater, of Woodford Hall, Over, Cheshire, and Colonel G. H. Cope, Deputy Chief Constable of Cheshire, with regard to the reported outbreak of anthrax on Mr. Slater's farm. From this it appears that, acting on the certificate of Mr. Harper, a local veterinary surgeon, Police Sergeant Egerton notified Mr. Slater on March 8th last that a heifer on the farm had died from anthrax. Mr. Slater, dissatisfied with this decision, called in the services of Mr. Albert H. Darwell, M.R.C.V.S., who certified that the animal had died from "carbuncular erysipelas," commonly known as "black quarter." Mr. Laithwood, the county consulting veterinary inspector, who subsequently made an examination, also certified that the case was "not anthrax." Mr. Slater contends that had his demand for an examination by the Chief Veterinary Inspector been complied with in the first instance no public declaration of the existence of anthrax would have been made, and he would have escaped the restrictions he was put under and have been spared the anxiety and loss which he had consequently suffered.

MEASLES AND THE LOWER ANIMALS.—Certain experiments of Behla which led him to the conclusion that measles could be communicated to pigs from the human subject were noted in the *British Medical Journal* some time ago, and it was observed that the very high mortality now produced by measles, which shows no tendency to diminish owing to the improved sanitation of recent times, lends special importance to inquiries into its etiology. Behla's experiments, which consisted in the application to the mouth and nose of the

sucking pig of secretions from the mouth and throat of children suffering from measles, have been repeated by Dr. A. Josias, Physician to the Trousseau Hospital in Paris, but without result. He, however, extended his trials to certain monkeys. Macaque monkeys were found to be insusceptible, but monkeys belonging to the genus cebus were found in certain cases to contract a disease which presented striking points of resemblance to measles. The infective material used was obtained by swabbing the naso-pharynx and throat of children suffering from measles at a period when the eruption was full out. The swabs were then rubbed into the nasal cavities and the throat of the monkeys. In two of the monkeys the disease began the thirteenth and eleventh days respectively; in the third, a cebus capucinus, the eruption appeared on the twenty-seventh day. It should be added that all the monkeys were kept for some time in a room in which children suffering from measles were being nursed. In the case of the capucin the eruption was observed both upon the face and limbs. In a cebus robustus it was marked upon the neck and abdomen. In neither of these animals was there definite coryza, but both sneezed a good deal. Dr. Josias has no hesitation in expressing the opinion that these monkeys suffered from measles, but before entirely accepting this view it would be desirable to have confirmatory evidence. It may be observed that the nature of the infective agent of measles is not known in spite of the very numerous researches which have been made with the view of identifying it. It is true that Canon and Pielicke, in 1892, described a small bacillus which they had found in cases of measles, and which they believed to be the specific agent, and it is true that Czajkowski has more recently recorded the existence of a bacillus, probably identical with that of Canon and Pielicke, which he believed to be the specific agent, but these researches require confirmation, and, so far as we are aware, Canon and Pielicke have not themselves returned to the subject. It is, perhaps, noteworthy that in small-pox, scarlet fever, and variola, as well as in measles, no specific bacterium has certainly been identified, and the opinion is held on *a priori* grounds by some authorities whose opinion is of value that it may possibly turn out that these specific diseases, which are clearly due to some contagium vivum, are produced by protozoa. In this connection it is interesting to recall that Döhle believed that he had succeeded in identifying protozoa in the blood, not only in measles, but also in scarlet fever and small-pox. These researches, published in 1892, still await confirmation or disproof. The mortality produced by measles at the present time in all civilised countries is so serious that it is eminently desirable that we should have more precise information as to the intimate nature of the infective agent.

Communications, Books, Journals, etc., Received.

The Lancet; Land and Water; Veterinarian; Veterinary Record; American Veterinary Review; Journal of Comparative Medicine; Australian Farm and Home; Results of Use of Tuberculin, by James Wilson, M.A.; Bacteriological Diagnosis, by St. John Reid; Country Life Illustrated; Recueil de Médecine Vétérinaire (Alfort); La Presse Vétérinaire (Paris); L'Echo Vétérinaire (Liége); Annales de Médecine Vétérinaire (Brussels); Berliner Thierärztliche Wochenschrift (Berlin); La Clinica Veterinaria (Milan); Il Nuovo Ercolani (Pisa); La Revista Veterinaria (Buenos Aires); Deutsche Thierärztliche Wochenschrift (Hannover und Karlsruhe); Archivos de Medicina Lisbon: José Bastos); The Johns Hopkins Hospital Reports; a Text Book of Veterinary Ophthalmology, by Geo. G. Van Mater, M.D., D.V.S.; Trattato di Tecnica, e. Terapeutica Chirurgica Animali Domestici del Dott. N. Lanzillotti, Buonsanti; the Clinical Diagnosis of Lameness in the Horse, by W. E. A. Wyman, V. S., South Carolina; the Scottish Medical and Surgical Journal.